

Residential Segregation of Age Groups in Hamburg 1961, 1979, 1977

Schütz, Martin W.

Veröffentlichungsversion / Published Version
Sammelwerksbeitrag / collection article

Empfohlene Zitierung / Suggested Citation:

Schütz, M. W. (1982). Residential Segregation of Age Groups in Hamburg 1961, 1979, 1977. In J. Friedrichs (Ed.), *Spatial disparities and social behavior : a reader in urban research* (pp. 45-68). Hamburg: Christians Verl. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-352034>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY-NC-ND Lizenz (Namensnennung-Nicht-kommerziell-Keine Bearbeitung) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier:
<https://creativecommons.org/licenses/by-nc-nd/4.0/deed.de>

Terms of use:

This document is made available under a CC BY-NC-ND Licence (Attribution-Non Commercial-NoDerivatives). For more information see:
<https://creativecommons.org/licenses/by-nc-nd/4.0>

RESIDENTIAL SEGREGATION OF AGE GROUPS IN HAMBURG 1961, 1970, 1977

Martin W. Schütz

In this article the author published the initial findings of a comprehensive research project on "Segregation of Age Groups". The project's objective is to provide a partial explanation for the uneven distribution of age groups in the city, to present an extensive description of empirically discernible segregation in Hamburg, and to attempt an empirically founded analysis.

The following statements contain a presentation of the theoretical foundation which has been condensed in favour of a broader presentation of the most essential findings arrived at so far. Due to the limited amount of space available, the author has decided against detailed description of research methods and instruments; the latter in particular are presented only to the degree that they are essential to the understanding of the empirical findings. A more comprehensive presentation and discussion is published in typoscript form (SCHÜTZ 1979).

1. Problem

The polarisation of urban population as a result of selective migration out of the city (basically, the inner city hosts low-income and minority groups whilst the middle and upper classes live in the urban fringe areas) has become a central problem, adopting crisis proportions for political decision-makers.

Urban flight involves not only the different income groups of a city's population; the various age groups are also disproportionately involved in the process. Young families with small children tend to settle in the new estates outside the city centre or in the usually less densely populated small towns of an urban region. Left behind in the city are the elderly, and young people with limited incomes (or foreign workers and their families) move in to the pre-war dwellings. The afore-mentioned is a rough outline of this development pattern.

Warnings by sociologists against such age-related segregation surfaced early. Attention must also be paid to the consequences of an uneven spread of age groups: The age-specific infrastructure of inner-city housing areas suffers increasingly from too little use; schools and kindergartens, for instance, have to be merged and children still living in such areas must travel greater distances to reach them. The same applies to the

elderly; as soon as small-shop owners follow the population and close down their businesses in the inner city, older people have to make longer and - depending on their state of health - more difficult shopping "trips" to the supermarkets. In areas of growth, the question arises as to whether tax money should go towards financing the obvious yet age-specific needs of young families, or should it also be used to help anticipate coming changes in the infrastructure and avoid possible future under-use of area facilities. Future problems for a currently one-sided age structure in development areas are obvious. The aging of a population that originally was composed of mainly young families leads to changing needs and eventually even to the unavailability of housing for young couples; new estates must then be set up elsewhere...

These problems did not first arise with selective shifts in the population; they were simply hidden from view in a period when the city faced its main crisis in the form of the population explosion.

2. Theory

Urban change in West Germany since the early 1960s has been marked by expansion. Cities are expanding beyond their administrative boundaries as urban facilities and functions and city-dwellers move into the surrounding regions. This process, following the lead taken by Anglo-American studies, is termed "suburbanisation". In population terms this may be defined as the migration of population from the inner core and other regions to the suburban areas. This redistribution affects individual population groups to varying degrees. Discussion of "urban flight" in this context primarily deals with the departure of higher-income households and the staying behind of lower-income groups. This view ignores the possibility, however, that migrants and non-migrants may also be grouped according to age.

Drawing from empirical research on migration, the thesis may be established that migration is chiefly explainable by such family-related changes as marriage, the advent of children or the departure of the youngest child from a household (SPEARE 1970, CHEVAN 1971, LONG 1972, GUEST 1972). Resultant theoretical assumptions concerning the relationship between the life-cycle stage and migration may be summed up as follows (SALINS 1971, PICKVANCE 1973, ROBSON 1975):

As the individual passes through various stages of the life-cycle, his or her particular spatial needs and wishes change. Singles and childless families require less internal and external living space

than do families with children; the former group instead seeks greater access to the leisure activities and entertainment offered by the city; its members are more likely to live in apartment buildings near the city centre. With increases in household size, particularly through the birth of children, a need emerges for more inside and outside space, accompanied by a diminishing demand for inner-city leisure activities; these demands are more readily catered for in the fringe areas of the city than in the inner city. When children leave the parental household, less space is needed there; the parents, now "childless", migrate back into the city, where they more easily encounter the specific infrastructure their age group requires - for instance, in the field of health care.

This concept is intended to provide a determination of the residential location of population groups in their specific life-cycle stages and a determination of the distribution process.

The theoretical link between the differentiation of the urban population according to life-cycle stage and migration is the varied nature of spatial requirements depending on the position in the life cycle. Spatial requirements change with shifts in this position; spatial need and spatial reality are usually reconciled via migration.

Differences in spatial requirements according to life-cycle stage leads to a situation in which not all specific life-cycle stage population groups participate to an equal degree in migration. For example, the population group in need of more room to launch new households or to enlarge existing ones for larger families, the 20 to 35-year olds, is disproportionately active in migration in comparison to its numerical significance within the population as a whole. Members of this group leave parental households, start families, have children - events usually associated with moving into new, larger living quarters. This is confirmed by empirical literature and also applies to other age groups.

For the individual city districts or areas disproportionate participation by age groups in the migration process produces a selective, age-specific migration resulting in a spatial age-specific stratification process. This, in turn, has as a consequence an age-specific segregation. Extensive discussion of the last two terms (SCHÜTZ 1979:8-34) leads to the following definition of the word "segregation", which is central to the remainder of this thesis (SCHÜTZ 1979:40):

age group based segregation = def: the unequal proportion of a

particular age group within the population of a city district as compared to its proportion of the total city population.

The term "segregation" in this case represents a refinement and operationalisation of the general (but low-content) term "uneven spatial spread of population groups " (FRIEDRICH 1977:216). It involves the observation of population structures at any given point in time and thus describes a situation, not a process. Segregation is a descriptive category, not an explanatory one. Applied to the age-specific spread of population in the city, segregation of age groups as described above includes the uneven spatial spread of age-specific population groups throughout individual city areas. The segregation of age groups can be traced to selective age-specific migration and is a precise description of the consequences of age group-specific stratification in city districts.

If the life cycle concept is applied to the distribution of age groups, segregation of age groups then describes a population which lives segregated in individual city districts according to its respective stage in the life cycle.

Summary: The individual passes through the various stages of the life cycle during his or her life. His or her spatial needs depend on the individual's position in the life cycle. As soon as the individual alters his or her stage in the life cycle, he or she then attempts to adjust the spatial situation to fit his or her changed needs; this generally occurs via migration. These spatial needs, however, cannot be fulfilled by the internal and external facilities of the housing units existing all over the city. It lies in the nature of housing construction that time-wrought changes in housing do not automatically render earlier forms of housing obsolete. Older housing is not immediately replaced by more recent forms. Rather, more, new forms of housing complement the older ones, making a city's housing stock more heterogeneous over time. A heterogeneous overall housing situation is a prerequisite for the formation of the housing situation specific to each life-cycle stage.

To put it more generally, the more heterogeneous a city's housing stock is, the larger the possibilities for the formation of housing situations specific to each life-cycle stage become. A combination of modern-style housing and the older variety already existing, admittedly, in a different part of the city, leads to the creation of urban areas with predominantly homogeneous housing. MANHART (1977) demarked homogeneous urban areas on a detailed scale for Hamburg. This results in the hypothesis that the

population of such urban areas is homogeneously composed according to life-cycle stages: segregation of age groups.

3. Empirical Research

The study referred to the findings of the 1960 and 1971 censuses, 1977 residential data and the findings of the 1968 building and housing census. Of the 180 administrative districts in Hamburg, 179 were included in the analysis (the Hamburg-administrated island Neuwerk in the Elbe Estuary near Cuxhaven was excluded).

Measurement of segregation was carried out by using DUNCAN & DUNCAN's (1955) Index of Segregation (IS). As this index was developed for the comparison of different cities using major occupation groups, whereas this study compares districts within a single city and age groups - each of the latter groups being interdependent, not so in the case of occupation groups - , the Index of Deviation (Index der Abweichung, IA), divided into categories A to E, was developed as the primary instrument for measurement so as to enable meaningful and sound conclusions on the various levels of observation. The interpretation of findings arrived at by means of individual IA categories appear in the text immediately after the presentation of values. (For detailed presentation and discussion of segregation measurements see SCHÜTZ 1979:54-71).

Age groups were formed on the basis of a theoretically assumed course of life-cycle stages within the life-cycle (cf. SCHÜTZ 1979:72-74).

4. Findings

Description of Age Group-Specific Segregation in Hamburg

The increase in segregation by age groups as indicated by theoretical deliberations was confirmed.

A review of all age groups in the Hamburg population in 1961, 1970 and 1977 results in the following segregation values (table 1):

Table 1: Index of Deviation (E) for age groups¹⁾ within Hamburg's residential population, 179 districts, 1961, 1970, 1977

| Year | IA/E |
|------|------|
| 1961 | 5.0 |
| 1970 | 7.2 |
| 1977 | 7.4 |

¹⁾ Age group categories:
0 - 5 years
6 - 20 "
21 - 44 "
45 - 64 "
65 years and over

Interpretation of these values reveals that 5 per cent of Hamburg's residents, divided according to age groups, would have had to have moved to different areas to create an average age structure in all individual areas equal to the average age structure for the city as a whole in 1961. Age-group specific segregation rose to 7.2 per cent in 1970 and 7.4 per cent in 1977.

If each age group is studied separately the following perspective unfolds (Table 2):

Table 2: Index of Deviation (C) for age groups within Hamburg's residential population, 179 districts, 1961, 1970, 1977

| Age Group No. | Ages | Index of Deviation C | | |
|---------------|---------|----------------------|------|------|
| | | 1961 | 1970 | 1977 |
| 1 | 0 - 5 | 10.3 | 11.2 | 10.0 |
| 2 | 6 - 20 | 5.1 | 8.8 | 10.7 |
| 3 | 21 - 44 | 3.1 | 4.3 | 4.9 |
| 4 | 45 - 64 | 4.1 | 6.2 | 5.4 |
| 5 | 65 + | 8.5 | 11.1 | 10.6 |

For Age Group 1 to have shown the same proportion of the population in each of Hamburg's 179 districts in 1961 as for the city as a whole, 10.3 per cent of all Hamburg residents between the ages of 0 and 5 years would have had to have moved to different areas. By 1970 this figure had risen to 11.2 per cent, only to fall to 10.0 per cent in 1977.

The degree of participation by each individual age group in total age-group specific segregation between 1961 and 1977 also varied (Table 3): Participation by Age Group 1 in total segregation in 1961 was 14.1 per cent, for instance, dropping to 12.0 per cent in 1970 and 5.9 per cent in 1977. Corresponding values for Age Group 4 also fell, whereas participation by Age Groups 2, 3 and 5 in age-specific segregation throughout the city as a whole rose during all years under review.

Table 3: Index of Deviation (D) for age groups within Hamburg's residential population, 179 districts, 1961, 1970, 1977

| Age Group No. | Ages | Index of Deviation D | | |
|---------------|---------|----------------------|---------|---------|
| | | 1961 | 1970 | 1977 |
| 1 | 0 - 5 | 14.2 | 12.0 | 5.9 |
| 2 | 6 - 20 | 18.2 | 20.4 | 27.4 |
| 3 | 21 - 44 | 19.8 | 19.9 | 22.9 |
| 4 | 45 - 64 | 23.8 | 21.8 | 16.4 |
| 5 | 65 + | 24.0 | 25.9 | 27.4 |
| (1-5) | | (100.0) | (100.0) | (100.0) |

DUNCAN & DUNCAN's Index of Segregation (IS) can be described as the classic measure of segregation. Though developed against a different background, the IS values for age segregation in Hamburg are presented here. For extensive discussion and comparison of IS and IA please refer to SCHÜTZ (1979:54ff, 71).

Table 4: Index of Segregation (IS) for age groups within Hamburg's residential population, 179 districts, 1961, 1970, 1977

| Age Group No. | Ages | Index of Segregation (IS) | | |
|---------------|---------|---------------------------|------|------|
| | | 1961 | 1970 | 1977 |
| 1 | 0 - 5 | 11.1 | 12.2 | 10.5 |
| 2 | 6 - 20 | 6.2 | 10.6 | 13.2 |
| 3 | 21 - 44 | 4.6 | 6.5 | 7.5 |
| 4 | 45 - 64 | 5.8 | 8.4 | 6.9 |
| 5 | 65 + | 9.9 | 13.3 | 13.1 |

Table 4, like Table 2, reveal the rising age segregation in Hamburg. If the IS values were to represent segregation values for occupation groups, these would have to be described as extremely slight and thus negligible. Acting on our criticism of the applicability of the IS as regards age groups (SCHÜTZ 1979:55-62), we come to the conclusion that the IS values arrived at have, on the whole, turned out to be very high. Due to a lack of possibilities for comparison, however, final judgement must await empirical studies in other West German cities.

The figures in Tables 2 and 4 gain in informational value through simultaneous observation of population changes in Hamburg (table 5).

Table 5: Number of residents in Hamburg 1961, 1970, 1977 by age groups

| Age Group No. | 1961 | | 1970 | | 1977 | | measure of change (1961 = 100) | |
|---------------|-----------|-----------------|-----------|-----------------|-----------|-----------------|--------------------------------|------|
| | absolute | % ¹⁾ | absolute | % ¹⁾ | absolute | % ¹⁾ | 1970 | 1977 |
| 1 | 125,632 | 7 | 138,934 | 8 | 74,124 | 4 | 111 | 59 |
| 2 | 326,572 | 18 | 300,363 | 17 | 325,922 | 19 | 92 | 100 |
| 3 | 586,018 | 32 | 599,074 | 33 | 600,286 | 35 | 102 | 102 |
| 4 | 535,981 | 29 | 452,445 | 25 | 386,969 | 23 | 84 | 72 |
| 5 | 257,110 | 14 | 302,966 | 17 | 330,322 | 19 | 118 | 128 |
| 1-5 | 1,831,313 | 100 | 1,793,782 | 100 | 1,717,563 | 100 | 98 | 94 |

1) rounded off

Source: See SCHÜTZ 1979:49/50

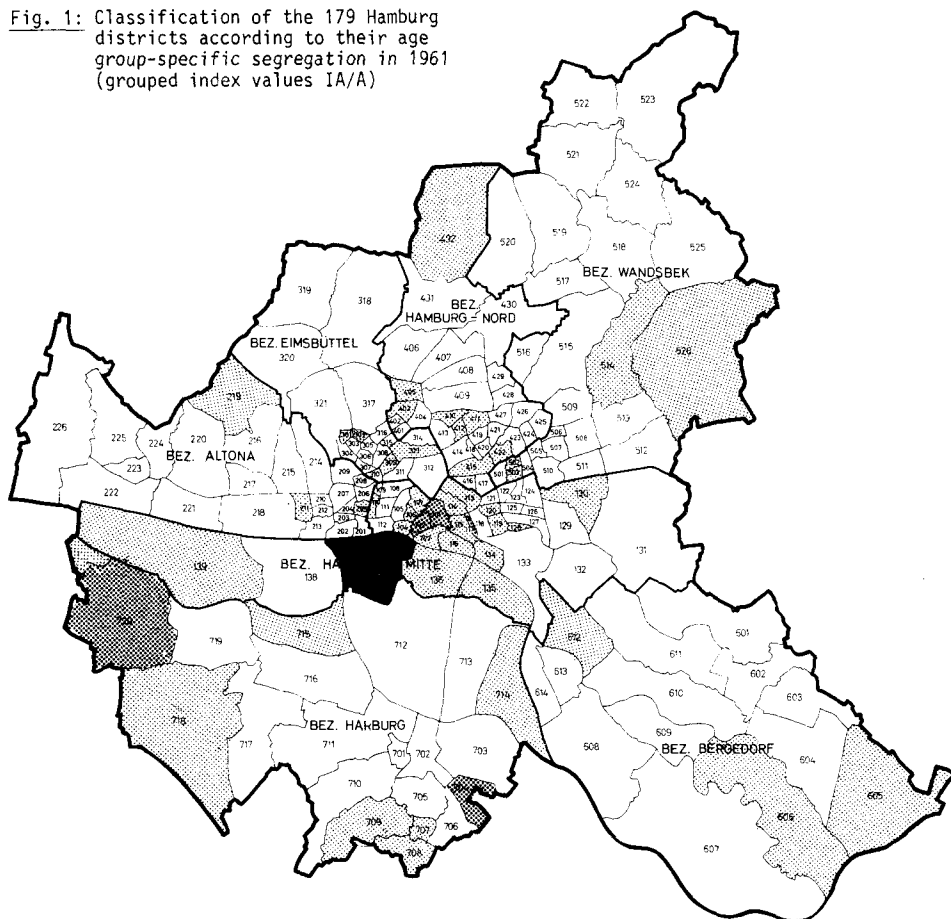
It must be noted that the IS and the IA are mathematically constructed in such a way that changes in population figures have no influence on the level of the index values.

The following figures illustrate the degree to which individual districts were affected by age-sepcific segregation. (Segregation values for the 179 districts have been divided into four categories of equal range which, however, vary from year to year due to differences in spread.)

Comparisons show (fig. 1 to 3):

- About 70 per cent of the districts in 1961 belong to the lowest value group contained in the Index of Deviation A (IA/A); the remaining 30 per cent are in the main densely populated residential areas in the inner city. The area of highest concentration lies east of the Alster; peripheral areas not in the lowest value group are the exception.
- The situation in 1970 is basically the same. The number of districts in the second highest value group has more than doubled from 5 to 12; these and the districts contained in the third highest value group are concentrated, as before, in residential areas east of the Alster. A slight dispersion of both value groups is present to the extent that the distance between the residential areas for both groups and the inner city has increased. These areas are almost exclusively those which lie north of the Elbe and were classified as "urban" by ECKEY (1978:201).
- In 1977, continuing dispersion in the above sense points towards an increase in age-specific segregation. The number of districts in the group with the second highest values is again more than twice its previous figure, the category now including areas west of the Alster. If ECKEY's 1970 classification of districts in Hamburg is applied to the 1977 situation suburban districts are more strongly represented in the highest value group than in 1970. Only 3 suburban districts, all of them south of the Elbe, are to be found in the second highest value group.
- Only Steinwerder (District 137) belongs to the highest value group in 1961 and 1970; in 1977 it is replaced by Steilshoop (516). The switch proves hardly surprising, as construction of a large new housing estate cleared the way for considerable growth in the district's population between 1970 and 1977 (population in 1977:22,698). The 0-44 year age group, already highly overrepresented in 1970 at 72 per cent (total Hamburg average: roughly 58 per cent), increased its share to 80.1 per cent of the district's population by 1977, thus increasing the age-specific distortion (total Hamburg average: still roughly 58 per cent). -

Fig. 1: Classification of the 179 Hamburg districts according to their age group-specific segregation in 1961 (grouped index values IA/A)



LEGEND

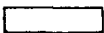



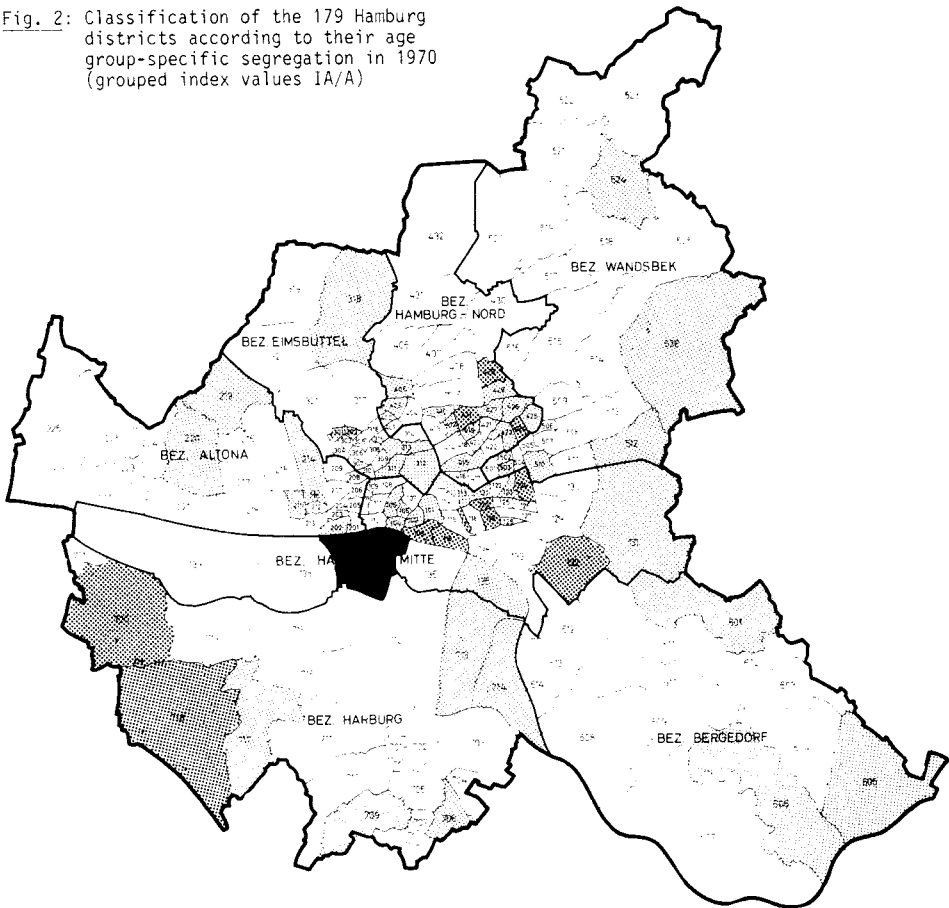
| | Values IA/A | Numbers of districts |
|---|----------------|-------------------------|
|  | 0.80- 6.55 | 126 |
|  | 6.56-12.30 | 47 |
|  | 12.31-18.05 | 5 |
|  | 18.06-23.80 | 1 |

Fig. 2: Classification of the 179 Hamburg districts according to their age group-specific segregation in 1970 (grouped index values 1A/A)







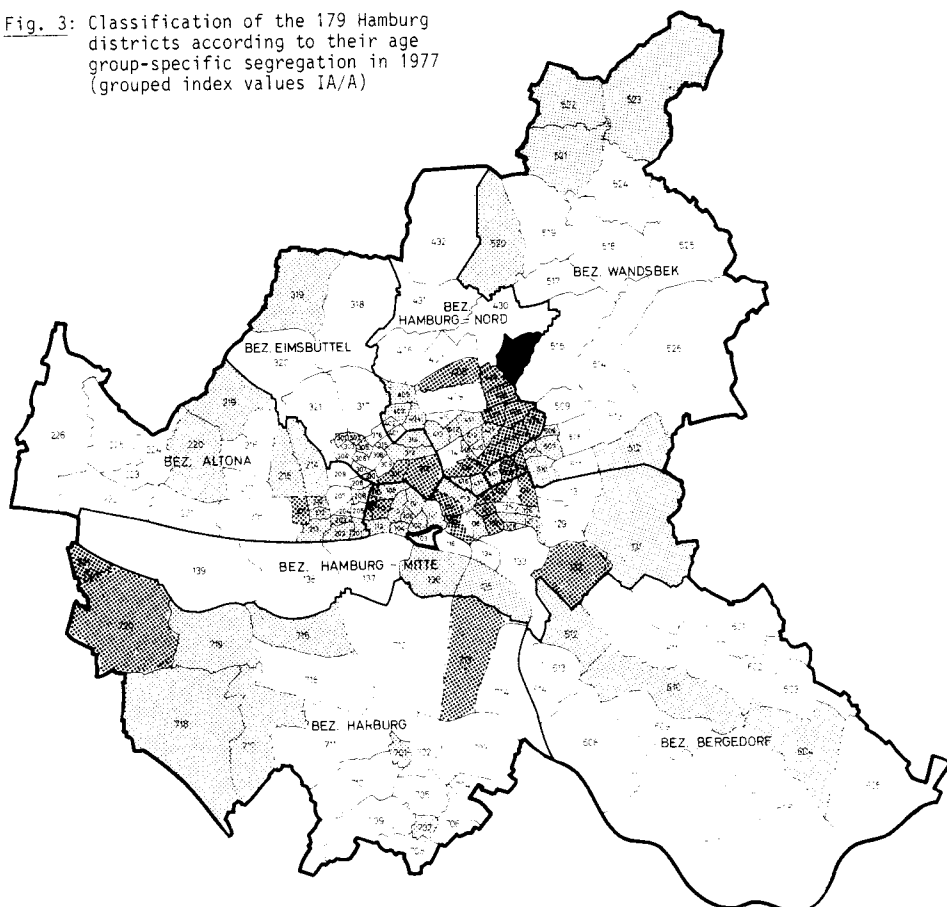





| LEGEND | | |
|---|----------------|-------------------------|
| | Values 1A/A | Numbers of districts |
|  | 1.10- 7.65 | 120 |
|  | 7.66-14.20 | 46 |
|  | 14.21-20.75 | 12 |
|  | 20.76-27.30 | 1 |

Fig. 3: Classification of the 179 Hamburg districts according to their age group-specific segregation in 1977 (grouped index values IA/A)



LEGEND

| | Values IA/A | Numbers of districts |
|---|----------------|-------------------------|
|  | 1,80- 6,85 | 86 |
|  | 6,86-11,90 | 64 |
|  | 11,91-16,95 | 28 |
|  | 16,96-22,00 | 1 |
|  | excluded | 1 |

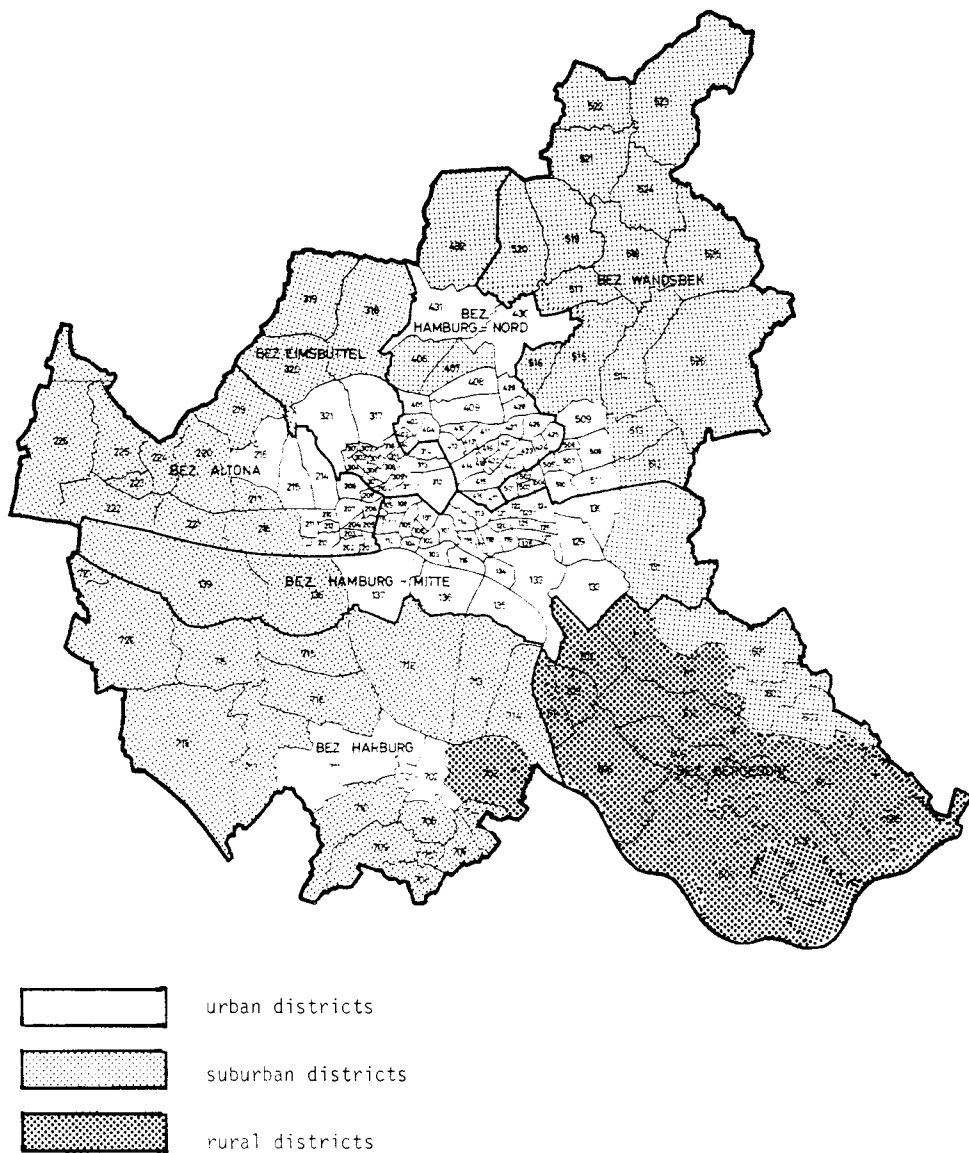
In an attempt to direct more attention to the structural characteristics of individual districts, theoretical considerations led to a grouping of the 179 districts. Guidelines included the distance between the respective district groups and the inner city, together with the characteristics of their dwellings or their population. One particularly interesting procedure was ECKEY's (1978) grouping of districts into urban, suburban and rural areas on the basis of a discriminant analysis (see fig. 4). If the populations of each of these three area groups are regarded individually and compared, the following segregation-related conclusions emerge (tables 6, 7 and 8 - the interpretation of changes in population is not taken into consideration here): Whilst the tendency toward changes in segregation in Hamburg as a whole does not register any noticeable uniformity (see Table 2 and 4) the opposite holds true for the urban and suburban district groups.

The extent of segregation for all age groups in these areas shows an upward trend and is approaching the level of the region as a whole (IS and IA/C). Age-specific segregation for the rural districts remains markedly below the Hamburg average and is on the decrease for Age Groups 2, 3 and 5. IA/E most clearly illustrates the segregation-related variations between the three area categories. The rural area group shows a slight decrease in segregation between 1961 and 1977, whilst segregation in the suburban areas remains constant between 1970 and 1977. Only the urban districts exhibit an increase in segregation between 1970 and 1977, from 22 per cent to 29 per cent. These trends, when applied to changes in residential population, illustrate that population loss in the urban districts was more selective than population growth in the suburban districts.

Statistical Ties Between Age Structure and Selected Characteristics

With reference to the theoretical considerations presented here it would be useful to investigate the statistical relationship between the age structure in individual districts on the one hand, and this particular area's distance from the inner city on the other. Due to their importance for further research, the following only presents the relationship between age structure and housing structure. The classification of Hamburg districts by MANHART (1977) and FRIEDRICHS (1977a) was taken as a basis, and the Eta-coefficient was chosen as the method of correlation. The following variables were borrowed from FRIEDRICHS (1977a).

Fig. 4: Classification of the 179 Hamburg districts according to their residential characteristics: urban, suburban and rural by ECKEY



Source: ECKEY 1978:201

Table 6: Index of Segregation, Index of Deviation C, D, E for age groups within Hamburg's residential population in 114 urban districts (by ECKEY), 1961, 1970, 1977

| Age group no. | ages | Index of Segregation (IS) | | | Index of Deviation C (IA/C) | | | Index of Deviation D (IA/D) | | | Index of Deviation E (IA/E) | | |
|---------------|---------|---------------------------|------|------|-----------------------------|------|------|-----------------------------|------|------|-----------------------------|------|------|
| | | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 |
| 1 | 0 - 5 | 8.9 | 7.8 | 9.1 | 8.3 | 7.3 | 8.8 | 11.3 | 8.4 | 4.7 | | | |
| 2 | 6 - 20 | 5.3 | 7.3 | 8.9 | 4.4 | 6.3 | 7.5 | 16.6 | 16.2 | 16.0 | | | |
| 3 | 21 - 44 | 4.8 | 6.7 | 10.3 | 3.3 | 4.6 | 6.7 | 23.3 | 26.6 | 33.1 | | | |
| 4 | 45 - 64 | 4.9 | 6.1 | 7.9 | 3.4 | 4.4 | 6.0 | 23.4 | 22.2 | 19.8 | | | |
| 5 | 65+ | 8.9 | 9.2 | 10.8 | 7.6 | 7.4 | 8.4 | 25.5 | 26.6 | 26.4 | | | |
| total | | | | | | | | | | | 4.5 | 5.5 | 7.1 |

| Age group no. | Residents 1961 | | Residents 1970 | | Residents 1977 | | Measure of Change (1961 = 100) | |
|---------------|----------------|-----|----------------|-----|----------------|----|--------------------------------|------|
| | absolute | % | absolute | % | absolute | % | 1970 | 1977 |
| 1 | 65,917 | 6 | 56,699 | 6 | 29,896 | 4 | 86 | 45 |
| 2 | 182,535 | 17 | 127,798 | 14 | 119,175 | 15 | 70 | 65 |
| 3 | 344,396 | 32 | 288,554 | 32 | 279,376 | 35 | 84 | 81 |
| 4 | 336,057 | 31 | 249,507 | 28 | 184,575 | 23 | 74 | 55 |
| 5 | 164,066 | 15 | 177,404 | 20 | 177,498 | 22 | 108 | 108 |
| total | 1,092,971 | 101 | 899,962 | 100 | 790,520 | 99 | 82 | 72 |

Slight errors may be present due to rounding off of figures

Source: See SCHÜTZ 1979:49

Table 7: Index of Segregation, Index of Deviation C, D, E for age groups within Hamburg's residential population in 53 suburban districts (by ECKEY), 1961, 1970, 1977

| Age group no. | ages | Index of Segregation (IS) | | | Index of Deviation C (IA/C) | | | Index of Deviation D (IA/D) | | | Index of Deviation E (IA/E) | | |
|---------------|-------|---------------------------|------|------|-----------------------------|------|------|-----------------------------|------|------|-----------------------------|------|------|
| | | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 | 1961 | 1970 | 1977 |
| 1 | 0- 5 | 8.1 | 9.0 | 9.9 | 7.5 | 8.2 | 9.4 | 15.1 | 14.1 | 8.3 | | | |
| 2 | 6-20 | 4.1 | 6.4 | 7.4 | 3.3 | 5.1 | 5.8 | 16.0 | 18.5 | 24.0 | | | |
| 3 | 21-44 | 3.8 | 4.8 | 5.0 | 2.6 | 3.1 | 3.3 | 21.2 | 20.4 | 21.0 | | | |
| 4 | 45-64 | 4.7 | 7.3 | 6.0 | 3.4 | 5.7 | 4.7 | 23.3 | 24.0 | 19.0 | | | |
| 5 | 65+ | 8.7 | 10.2 | 10.8 | 7.6 | 8.8 | 9.0 | 24.4 | 23.1 | 27.7 | | | |
| total | | | | | | | | | | | 4.0 | 5.4 | 5.4 |

| Age group no. | Residents 1961 | | Residents 1970 | | Residents 1977 | | Measure of Change (1961= 100) | |
|---------------|----------------|-----|----------------|-----|----------------|-----|-------------------------------|------|
| | absolute | % | absolute | % | absolute | % | 1970 | 1977 |
| 1 | 56,866 | 8 | 79,938 | 9 | 42,980 | 5 | 141 | 76 |
| 2 | 137,629 | 19 | 166,997 | 19 | 201,090 | 22 | 121 | 146 |
| 3 | 231,012 | 33 | 301,620 | 35 | 312,529 | 35 | 131 | 135 |
| 4 | 191,805 | 27 | 196,856 | 23 | 196,683 | 22 | 103 | 103 |
| 5 | 89,497 | 13 | 121,894 | 14 | 148,783 | 16 | 136 | 166 |
| total | 706,809 | 100 | 867,305 | 100 | 902,065 | 100 | 123 | 128 |

Slight errors may be present due to rounding off of figures

Source: See SCHÜTZ 1979:49

Table 8: Index of Segregation, Index of Deviation C, D, E for age groups within Hamburg's residential population in 12 rural districts (by ECKEY), 1961, 1970, 1977

| Age group no. | ages | Index of Segregation (IS) | | Index of Deviation C (IA/C) | | Index of Deviation D (IA/D) | | Index of Deviation E (IA/E) | |
|---------------|-------|---------------------------|------|-----------------------------|------|-----------------------------|------|-----------------------------|------|
| | | 1961 | 1970 | 1961 | 1970 | 1961 | 1970 | 1961 | 1970 |
| 1 | 0-5 | 3.6 | 5.6 | 3.2 | 5.1 | 9.9 | 14.5 | | |
| 2 | 6-20 | 3.6 | 3.1 | 2.9 | 2.4 | 20.0 | 16.9 | | |
| 3 | 21-44 | 3.8 | 3.3 | 2.5 | 2.2 | 28.8 | 24.1 | | |
| 4 | 45-64 | 2.9 | 4.4 | 2.2 | 3.4 | 19.1 | 25.6 | | |
| 5 | 65+ | 6.5 | 4.8 | 5.8 | 4.1 | 22.2 | 18.8 | | |
| total | | | | | | 2.9 | 3.0 | | 2.8 |

| Age group no. | Residents 1961 | | Residents 1970 | | Residents 1977 | | Measure of Change (1961 = 100) | |
|---------------|----------------|-----|----------------|-----|----------------|-----|--------------------------------|------|
| | absolute | % | absolute | % | absolute | % | 1970 | 1977 |
| 1 | 2,849 | 9 | 2,297 | 9 | 1,248 | 5 | 81 | 44 |
| 2 | 6,408 | 20 | 5,568 | 21 | 5,657 | 23 | 87 | 88 |
| 3 | 10,610 | 34 | 8,900 | 34 | 8,321 | 33 | 84 | 78 |
| 4 | 8,119 | 26 | 6,032 | 23 | 5,711 | 23 | 75 | 70 |
| 5 | 3,547 | 11 | 3,668 | 14 | 4,041 | 16 | 103 | 114 |
| total | 31,533 | 100 | 26,515 | 101 | 24,978 | 100 | 84 | 79 |

Slight errors may be present due to rounding off of figures

Source: See SCHÜTZ 1979:49

| | |
|--------|--|
| EIGWHG | Proportion of owner-occupied dwellings within the entire occupied housing stock, 1968 |
| FAMGEB | Proportion of buildings with three or more apartments within the entire occupied housing stock, 1968 |
| DICHTE | Residents per hectare (2,471 acres), 1970 |
| FLAPER | Square metre of housing per person, 1968 |

A housing index was also based on these variables.

These variables can be understood against the background of the correlation between the choice of housing area and the position in the life cycle, as presented in the theoretical section of this study; as regards the variable EIGWHG, it must be added that some 80 per cent of all condominiums are to be found in one- and two-family houses (MANHART 1977:18). The following Eta values may thus be interpreted as follows: The higher the correlation ratio, the greater the possibility of a specific life-cycle phase relationship.

Table 9: Eta values for the correlation between FRIEDRICHS' housing index and selected housing variables in 1968 on the one hand, and the relationship of age groups to the resident population in 1970 on the other, relating to the 179 Hamburg districts

| Age Group No. | Ages | Housing Index | EIGWHG | FAMGEB | DICHTE | FLAPER |
|---------------|-------|---------------|--------|--------|--------|--------|
| 1 | 0- 5 | +0.682 | +0.627 | -0.631 | -0.617 | -0.316 |
| 2 | 6-20 | +0.773 | +0.714 | -0.733 | -0.697 | -0.456 |
| 3 | 21-44 | +0.371 | 0.211 | -0.338 | -0.464 | 0.279 |
| 4 | 45-64 | -0.595 | -0.572 | +0.583 | +0.538 | +0.262 |
| 5 | 65+ | -0.653 | -0.435 | +0.600 | +0.649 | +0.402 |

Plus and minus signs were placed in conjunction with the correspondent values of the correlation coefficient.

Table 9 reveals that the relationship between the proportion of each age group and the housing index of each district is relatively high for all age groups except Age Group 3, and that this relationship shows varying tendencies in the case of the two youngest and two eldest age groups.

A detailed picture emerges following a closer look at the individual variables contained in the index. Here, too, the correlation ratios for Age Group 3 are shown to be the weakest. The relatively stable spread of this age group's members illustrated by the variables is presumably due

to this age group's specific life-cycle stage heterogeneity. This age group includes young people at the start of their careers as well as those who already have some career experience. These differences in income and time-related variations in the setting-up of individual families lead to a dispersion of this group's members throughout the city's districts. This conclusion concurs with the narrower segregation values for this age group in Hamburg in general.

The contrasting plus and minus signs for variables of the two youngest and two eldest age groups indicate intergenerational differences. A comparison of values with the housing index, drawn up to classify Hamburg's districts according to the availability of housing, shows that a relatively high proportion of the elderly live in districts with a lower housing index and that a high proportion of children and young people can be found in districts with a high housing index. A closer look at the values for the variables DICHT and FLAPER, for instance, provides useful information for explaining this result. Comparisons reveal a high proportion of people aged 45 and over in high-density population areas, even more so in the case of persons over 64 years of age. Worth noting, though not as pronounced, is the conclusion that age-specific differences in the districts exist with regard to average housing space per person; this points towards the probable invalidity of the thesis of group-related migration for people aged above 64 in Hamburg.

Whereas the above-mentioned variables relate to characteristics of housing and of spatial use, MANHART (1977) employs indicators of dwelling characteristics:

| | |
|-----|---|
| SAM | Proportion of housing units with central heating, bath and toilet, 1968 |
| NEU | Proportion of housing units built after 1948, 1968 |
| W6R | Proportion of housing units with 6 and more rooms, 1968 |
| WIN | Proportion of housing units in buildings with one or two apartments, 1968 |
| RAU | Average room size, 1968 |

The following correlation ratios emerge (Table 10):

Table 10: Eta values for the correlation between selected variables for dwelling characteristics in 1968 and the proportion of age groups in the resident population in 1970, relating to Hamburg's 179 districts

| Age Group No. | Ages | SAM | NEU | W6R | WIN | RAU |
|---------------|-------|--------|--------|--------|--------|--------|
| 1 | 0- 5 | -0.174 | +0.321 | +0.403 | +0.638 | -0.263 |
| 2 | 6-20 | 0.262 | +0.316 | +0.422 | +0.728 | -0.216 |
| 3 | 21-44 | +0.341 | 0.167 | 0.283 | +0.340 | +0.310 |
| 4 | 45-64 | -0.193 | +0.362 | -0.525 | -0.600 | +0.278 |
| 5 | 65+ | -0.303 | -0.272 | 0.167 | -0.555 | +0.197 |

Plus and minus signs were placed in conjunction with the corresponding values of the correlation coefficient.

These noticeably weaker relationships can only be partly interpreted on a specific life-cycle stage basis. Results for the variable WIN mirror those of the previous variable FAMGEB: results for the former are the reverse of the latter. Assuming that most of post-1948 housing is equipped with central heating, bath and toilet, the differing results for the variables SAM and NEU would appear surprising.

The correlation ratios for the two youngest age groups with regard to all five variables are similar; in contrast, in some cases substantial differences exist between the two eldest age groups. These differences - for example with regard to the variables SAM, NEU and RAU - could be explained by the probable age-specific differences in income (for example due to retirement) or by varying in opportunities to amass property. This assumption becomes plausible when one considers that a person who was 40 in 1977 began his or her career at a higher level of national economic development than someone who was 60 in the same year; therefore the chance for consuming the accumulating property as well as the "credit-worthiness" ("credit" used to mean a positive forecast of economic prospects on the basis of current personal wealth) of the latter is markedly lower than for the former person considering the points in time at which each individual turned 30.

The high correlation ratios for the variable WIN serve as confirmation of the assumption that the choice of a one- or two-family house can be explained by referring to a specific life-cycle stage concept. The strength of this relationship points towards the fact - somewhat complicated due to the aggregative level of data, yet interpreted exactly - that a high

proportion of children and young people within the population of any particular district correlates with a high proportion of dwelling units in one- or two-family houses as measured against the total number of dwellings in that district. On an individual level this leads to the assumption that households with children and young people are more likely to live in one- or two-family houses than are households without children and young people.

Summary: Hamburg, taken as a whole, reveals a clear increase in age group-specific segregation between 1961 and 1977. This segregation means that whilst the number of residents in Hamburg is decreasing, the proportion of the population which would have to move to other parts of the city to attain an even spread of age groups is on the rise. This trend, although not uniform for individual age groups, exhibits a general increase; the 0- to 5-year-old age group is the only one in which the extent of segregation is lower in 1977 than in 1961.

The rising trend towards of age group-specific segregation is also confirmed by an analysis of the individual districts. Whereas about 70 per cent of the districts belonged to the lowest quarter of spread shown in IA/A, their proportion was 67 per cent in 1970 and only 48 per cent in 1977. This can be described as an increasing spatial dispersion of age group-specific segregation throughout Hamburg's districts.

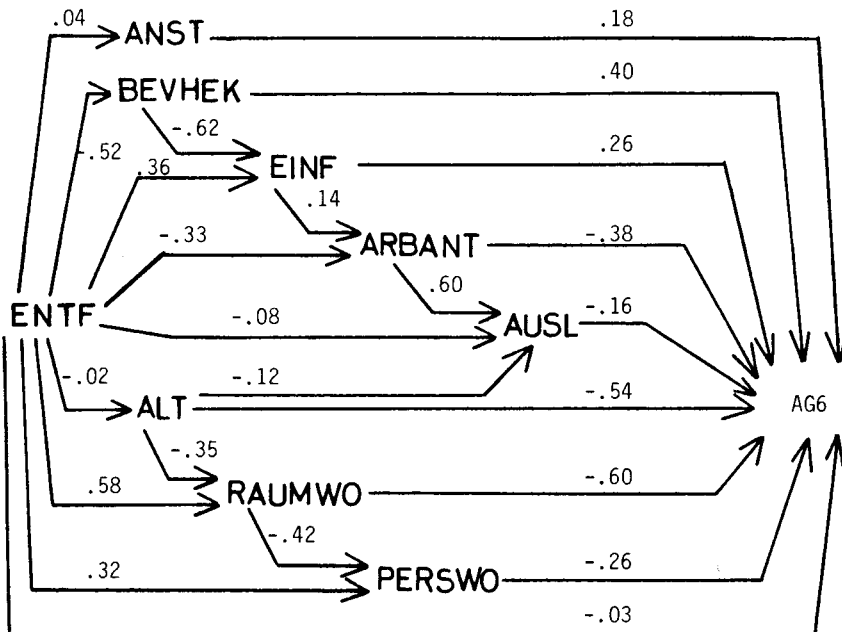
On the level of district groups, the classification of Hamburg districts into urban, suburban and rural groups shows that the category "urban" exhibits the strongest age group-specific segregation, the category "rural" the weakest.

Guidelines for the strength and tendency of the relationship between the sizes of each age group within the resident population and the selected variables point in part towards very clear patterns interpretable according to the specific life-cycle stage concept. Relationships for the Age Group of 21-44 years-olds are weak, which may be a result of the heterogeneity of this age group and its subsequent dispersion throughout the various districts. The conclusions for the two youngest and two eldest of the five age groups consistently reveal relatively high correlation values, albeit with reversed plus and minus signs. Several relationships presented can only then be interpreted to make sense if age group-specific differences in chances for accumulating property are taken into account together with variations in the life-cycle stage.

Path Analysis

Path analysis is intended to provide information on the susceptibility of individual groups' spatial distribution to planning-related influences. Hypotheses that were borrowed from currently available empirical and theoretical literature can be combined in a causal model (fig.5). Each of the now six age groups (0-5, 6-20, 21-34, 35-44, 45-64, 65 and over) was selected to serve as a dependent variable. The path analysis based on this procedure (see NIE et al. 1975:383 ff) led to the following conclusions for the age group 65 and over (fig. 5): The arrows pointing towards the dependent variable AG6 (65+) demonstrate the causal effect of independent variables included in the model; the inserted values demonstrate the established direction and the strength of the effects (the higher the value, the stronger the effect), and the signs reveal the tendency of the effect.

Fig. 5



Individual independent variables, in abbreviated form:

| | |
|--------|---|
| ENTF | Distance between district and Hamburg City Hall |
| ANST | Proportion of institution residents |
| BEVHEK | Density of population |
| EINF | Proportion of one- and two-family houses |
| ARBANT | Proportion of workers |
| AUSL | Proportion of foreigners |
| ALT | Proportion of dwellings built after 1947 |
| RAUMWO | Rooms per dwelling |
| PERSWO | Persons per dwelling |

One of these findings, for example, is that fig. 5 shows a strong negative effect (-.60) of the independent variable RAUMWO on the dependent variable AG6: The lower the number of rooms per housing unit, the higher the proportion of elderly in the district. Another finding is the strong negative effect (-.54) of ALT: The higher the proportion of housing units built after 1947, the lower the proportion of elderly in the district.

The findings resulting from this attempt at a causal explanation must, for the present, be subjected to methodological reservations, as several premises relating to the appropriateness of the method as regards the character of the data have not so far been confirmed. Taking these reservations into account, differences occurred between the Age Groups 0-5, 6-20 and 35-44 which were not previously expected. The various findings for the two youngest age groups in particular point towards effects which are not contained in the above causal model. In the case of the Age Group 21-34, the variables ARBANT and AUSL show the strongest effects. Differences, albeit already predicted, also emerged in the direct effects on the two eldest age groups which cannot be solely interpreted on a life cycle stage-specific basis. The findings further reveal that institution residents, as a part of the population with little or no choice as regards its choice of residential location, have no effect on the relative sizes of each of the four youngest age groups.

5. Discussion

Hamburg as a whole shows a clearly increasing age group-specific segregation between 1961 and 1977. This finds its expression in the fact that, parallel to falling residential figures for Hamburg, there is an increase in the number of persons who would have to change residences

so as to enable a proportional distribution of age groups within Hamburg. This trend, though not uniform for each of the individual age groups, is generally on the increase; the only case in which the extent of segregation in 1977 was lower than in 1961 is for the age group 0-5 years.

The upward trend in age group-specific segregation is also confirmed by a closer look at the individual city districts. Whereas some 70 per cent of all districts belonged to the lower quarter of the IA/A range in 1961, the figure was 67 per cent in 1970 and had fallen to just 48 per cent by 1977. This can be regarded as a sign of increasing spatial dispersion of age group-specific segregation throughout the Hamburg districts.

A look at the groups of districts reveals following a classification of districts into urban, suburban and rural groups the strongest age group-specific segregation is shown by urban districts and the weakest by rural districts.

Values for the intensity and direction of the relationship between the relative sizes of each age group in the population and selected variables point in part towards very clear patterns which are interpretable on an life-cycle stage-specifics basis. -

The problem of age-specific segregation in a city's population has so far been ignored by both scientific and city planning literature. Anglo-American literature up to now has only considered the segregation of elderly members of the population above the age of 60 (e.g. PAMPEL & CHOLDIN 1978, LA GORY, WARD & JURAVICH 1980); a general analysis of all age groups in any one city has as yet been lacking.

This situation explains why the findings presented here are of a predominantly descriptive nature. In order to enable the illustration of this phenomenon of age-specific segregation in its spatial structures, it was to begin with necessary to develop appropriate instruments. Our presentation used relevant hypotheses, (which, admittedly, are only to be found in unsystematic form in literature on this subject), to form a causal model for an initial attempt at explaining age group-specific segregation in Hamburg.

For the purpose of further research, the description's findings show the appropriateness of this theoretical approach to the research topic; the findings may therefore be employed in a planned empirical analysis of the conditions underlying formation and change in this process.

In order to implement this intention the author is currently working on a classification of homogeneous city areas where population and housing structures are characteristic for specific age groups.

The continuing analysis assumes, on the basis of the theoretical concept employed, that via individual spatial needs the housing situation and the life-cycle stage are closely inter-related. "Housing situation" as used here means how and where an individual lives in the city: Spatial needs determine the type of housing and, since not every type can be found in every part in the city, the residential location within the city. This results in the working hypothesis that the nature of the city's available housing determines the age-related composition of the population; this hypothesis will be further elaborated upon.

BIBLIOGRAPHY

Abbreviations

| | |
|-----|-------------------------------|
| AJS | American Journal of Sociology |
| ASR | American Sociological Review |
| JRS | Journal of Regional Science |
| SF | Social Forces |

- ABLER, R., ADAMS, J.S. & GOULD, P., 1972: Spatial Organization. London.
- ADORNO, T.W. (ed.), 1969: Spätkapitalismus oder Industriegesellschaft. Verhandlungen des 16. Deutschen Soziologentages. Stuttgart.
- AFFELD, D., 1973: Planungstechnologie und Planungsstrategie. Zur politischen Verwertbarkeit raumplanerischer "Entscheidungs"-Modelle. In: Raumforschung und Raumordnung 31, 121-125.
- AKADEMIE für Raumforschung und Landesplanung (ed.), 1972: Raumplanung - Entwicklungsplanung. Hannover.
- AKADEMIE für Raumforschung und Landesplanung (ed.), 1975: Beiträge zum Problem der Suburbanisierung. Hannover.
- AKADEMIE für Raumforschung und Landesplanung (ed.), 1978: Beiträge zur Suburbanisierung (2. Teil). Hannover.
- ALBERS, G., 1967: Vom Fluchtlinienplan zum Stadtentwicklungsplan. Zum Wandel städtebaulicher Leitvorstellungen und Methoden in den letzten hundert Jahren. In: Archiv für Kommunalwissenschaften 6, 192-211.
- ALBERS, G., 1969: Über das Wesen der räumlichen Planung. Versuch einer Standortbestimmung. In: Stadtbauwelt 21, 10-14.
- ALBRECHT, G., 1972: Soziologie der geographischen Mobilität. Zugleich ein Beitrag zur Soziologie des sozialen Wandels. Stuttgart.
- ALLERBECK, K., 1978: Meßniveau und Analyseverfahren - Das Problem "strittiger Intervallskalen". In: Zeitschrift für Soziologie 7, 199-214.
- ALONSO, W., 1964: Location and Landuse. Cambridge.
- AMINDE, H.-J., 1976: Entwicklungsdefizite in Wohnstadtteilen Kassels. Analyse und mögliche Maßnahmen. In: Stadtbauwelt 50, 103-106.
- AMIR, T., 1969: Contact Hypothesis in Ethnic Relations. In: Psychological Bulletin 71, 319-342.
- ANDERSON, J.G., 1973: Causal Models and Social Indicators: Toward the Development of Social System Models. In: American Sociological Review 38, 285-301.
- ANGELL, R.C., 1942: The Social Integration of Selected American Cities. In: AJS 47, 575-592.
- ANGELL, R.C., 1968: Social Integration. In: SILLS 1968.
- ASSMANN, G. & STOLLBERG, R., 1977: Grundlagen der marxistisch-leninistischen Soziologie. Frankfurt/M.
- ATTESLANDER, P. & HAMM, B. (eds.), 1974: Materialien zur Siedlungssoziologie. Köln.
- BALDERMANN, J., HECKING, G. & KNAUSZ, E., 1976: Wanderungsmotive und Stadtstruktur. Stuttgart.

- BARKER, R.G., 1968: Ecological Psychology. Stanford.
- BASLER, H.D., 1977: Untersuchungen zur Validität der Anomia-Skala. In: Kölner Zeitschrift für Soziologie und Sozialpsychologie 29, 335-342.
- BAUER, R.A. (ed.), 1966: Social Indicators. Cambridge, Mass.
- BELL, W., 1953: The Social Areas of the San Francisco Bay Region. In: ASR 18, 39-47.
- BERGMANN, J. et al., 1969: Herrschaft, Klassenverhältnis und Schichtung. In: ADORNO 1969.
- BERRY, B.J.L. & SMITH, K.B. (eds.), 1972: City Classification Handbook. New York.
- BINDING, G., 1976: Steuerungsinstrumente zur Vermeidung von Qualitätsdefiziten in Altstädten und Neubaugebieten. In: PFAFF & GEHRMANN 1976.
- BINGEMER, K. & MEISTERMANN-SEEGER, E., 1972: Leben als Gastarbeiter. Köln/Opladen.
- BLALOCK, H.M. jr., 1968: Theory Building and Causal Inferences. In: BLALOCK & BLALOCK 1968.
- BLALOCK, H.M. jr., 1969: Multiple Indicators and the Causal Approach to Measurement Error. In: AJS 75, 264-272.
- BLALOCK, H.M. jr. & BLALOCK, A.B. (eds.), 1968: Methodology in Social Research. New York.
- BLASS, W., DROTH, W. & FRIEDRICHS, J., 1978: Zur Revision der Sozialraum-analyse. In: Zeitschrift für Soziologie 7, 390-395.
- BOGARDUS, E.S., 1930: A Race-Relation Cycle. In: AJS 35, 612-617.
- BONACKER, M., 1979: Soziale Beziehungen in einem Slum-Gebiet. Eine Studie über Ausländer in Hamburg-Wilhelmsburg. Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.
- BONJEAN, D.M., HILL, R.J. & McLEMORE, S.D., 1967: Sociological Measurement. An Inventory of Scales and Indices. San Francisco.
- BORRIE, W.D., 1959: The Cultural Integration of Immigrants. Paris.
- BOYLE, R.P., 1970: Path Analysis and Ordinal Data. In: AJS 75, 461-480.
- BRENNER, M., DANGSCHAT, J., KIRCHNER, M., SCHIERHORN, R.-G. & ZIRWES, M., 1979: Soziale Indikatoren. Von einer intuitiven zu einer theoriegeleiteten Stadtentwicklungsplanung. Probleme der Messung, Bewertung und Beeinflussung sozialräumlicher Prozesse. Hamburg, unpublished.
- BRETON, R., 1964: Institutional Completeness of Ethnic Communities and the Personal Relations of Immigrants. In: AJS 70, 193-205.
- BROWN, H.J., 1975: Changes in Workplace and Residential Location. In: Journal of the American Institut of Planners 41(1).
- BROWN, L.A. & HORTON, F.E., 1970: Social Area Change: An Empirical Analysis. In: Urban Studies 7, 271-288.
- BUNDESANSTALT FÜR ARBEIT (ed.), 1973: Repräsentativuntersuchung 1972. Beschäftigung ausländischer Arbeitnehmer. Nürnberg.
- BUNDESFORSCHUNGSANSTALT für Landeskunde und Raumordnung (ed.), 1978: Laufende Raumbbeobachtung. In: Informationen zur Raumentwicklung 8/9. Bonn.

- BMBau (Bundesminister für Raumordnung, Bauwesen und Städtebau, ed.), 1975: Raumordnungsprogramm für die großräumige Entwicklung des Bundesgebietes (Bundesraumordnungsprogramm) vom 14. Februar 1975. Schriftenreihe Raumordnung des Bundesministeriums für Raumordnung, Bauwesen und Städtebau 06.002. Bonn.
- BUNGE, M., 1975: What is a Quality of Life Indicator? Social Indicators Research 2, 65-79.
- BURGESS, E.W., 1925: The Growth of the City. In: STEWART 1972.
- BURGESS, E.W. & BOGUE, D.J. (eds.), 1964: Contribution to Urban Sociology. Chicago/London.
- CAMPBELL, A., CONVERSE, P.E. & RODGERS, W.L., 1976: The Quality of American Life. Perceptions, Evaluations and Satisfaction. New York.
- CARLSTEIN, T., PARKES, D. & THRIFT, N. (eds.), 1978: Timing Space and Spacing Time, 3 Vols. London.
- CHAPIN, F.S., 1974: Human Activity Patterns in the City. New York.
- CHAPIN, F.S., 1978: Human Time Allocation in the City. In: CARLSTEIN, PARKES & THRIFT 1978, Vol. 2.
- CHAPIN, F.S. & FOERSTER, J.F., 1975: Teenager Activity Patterns in Low-Income Communities. In: MICHELSON 1975.
- CHAPIN, F.S. & HIGHTOWER, H., 1965: Household Activity Patterns and Land Use. In: Journal of the American Institute of Planners 31, 222-231.
- CHEVAN, A., 1971: Family Growth, Household Density, and Moving. In: Demography 8, 451-458.
- COHEN, S.M., 1977: Socioeconomic Determinants of Intraethnic Marriage and Friendship. In: SF 55(4), 997-1010.
- CORTESE, C.F., FALK, R.F. & COHEN, J.K., 1976: Further Considerations on the Methodological Analysis of Segregation Indices. In: ASR 41, 630-637.
- COUGHLIN, R.E., 1973: Attainment Along Goal Dimensions in 101 Metropolitan Areas. In: Journal of the American Institute of Planners 39, 413-425.
- CRESSEY, P.F., 1938: Population Succession in Chicago: 1898 - 1930. In: AJS 44, 59-69.
- CRESSEY, P.F., 1975: Population Succession in Chicago in 1898 - 1930. In: PEACH 1975.
- CULLEN, I.G., 1972: Space, Time and the Disruption of Behaviour in Cities. In: Environment and Planning 4, 459-470.
- CULLEN, I.G. & GODSON, V., 1975: Urban Networks: The Structure of Activity Patterns. In: Progress in Planning 4, 1-96.
- CULLEN, I.G. & PHELPS, E., 1977: Patterns of Behaviour and Responses to the Urban Environment. In: MICHELSON 1977.
- DALY, M., 1971: Characteristics of 12 Clusters of Wards in Greater London. GLC Research Report No. 13. London.
- DANGSCHAT, J., 1978: Messung sozialer Benachteiligung in städtischen Teilgebieten über soziale Indikatoren. Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.
- DANGSCHAT, J., DROTH, W., FRIEDRICHS, J. & KIEHL, K., 1982: Aktionsräume von Stadtbewohnern. Opladen.

- DAVISON, V.F. & SHANNON, L.W., 1977: Change in the Economic Absorption of a Cohort of Immigrant Mexican Americans and Negroes Between 1960 and 1971. In: *International Migration Review* 11, 190-214.
- DEUTSCH, K.W., 1953: *Nationalism and Social Communication*. New York.
- DIEKMANN, A., 1977: *Kausalmodelle, soziale Indikatoren und soziale Praxis*. In: EICHNER & HABERMEHL 1977.
- DIEKMANN, A. & SCHMIDT, P., 1978: *Soziale Indikatoren-Modelle. Planungsstrategien und Gesellschaftstheorie*. Hamburg, unpublished.
- DOBRINER, W.M. (ed.), 1958: *The Suburban Community*. New York.
- DOGAN, M. & ROKKAN, S. (eds.), 1969: *Quantitative Ecological Analysis in the Social Sciences*. Cambridge, Mass.
- DOUGLASS, H.P., 1925: *The Suburban Trend*. New York.
- DOWNS, R.M. & STEA, D. (eds.), 1973: *Image and Environment, Cognitive Mapping and Spatial Behaviour*. Chicago.
- DOWNS, R.M. & STEA, D., 1977: *Maps in Minds*. New York.
- DREWNOWSKI, J. & SCOTT, W., 1966: *The Level of Living Index*. Geneva.
- DROTH, W., 1979: *Eine individualistische Theorie des Freizeitverhaltens*. Ph. D. University of Hamburg. Hamburg.
- DUKE, R.D., 1964: *Gaming-Simulation in Urban-Research*. Ann Arbor.
- DUNCAN, O.D., 1969: *Toward Social Reporting: Next Steps*. New York.
- DUNCAN, O.D. & DUNCAN, B., 1955: Residential Distribution and Occupational Stratification. In: *AJS* 60, 493-503.
- DUNCAN, O.D. & DUNCAN, B., 1957: *The Negro Population of Chicago: A Study of Residential Succession*. Chicago.
- DUNCAN, O.D. & LIEBERSON, S., 1959: Ethnic Segregation and Assimilation. In: *AJS* 64, 364-374.
- ECKEY, H.F., 1978: *Das Suburbanisierungsphänomen in Hamburg und seinem Umland*. In: *AKADEMIE* 1978.
- EEKHOFF, J., MUTHMANN, R., SIEVERT, O., WERTH, G. & ZAHL, J., 1977: *Methoden und Möglichkeiten der Erfolgskontrolle städtischer Entwicklungsmaßnahmen. Schriftenreihe Städtebauliche Forschung des Bundesministeriums für Raumordnung, Bauwesen und Städtebau* 03.060. Bonn.
- EICHNER, K. & HABERMEHL, W. (eds.), 1977: *Probleme der Erklärung sozialen Verhaltens. Meisenheim an der Glan*.
- EISENSTADT, S.N., 1954: *The Absorption of Immigrants*. London.
- EKLUND, K.E. & WILLIAMS, O.P., 1978: The Changing Spatial Distribution of Social Classes in a Metropolitan Area. In: *Urban Affairs Quarterly* 13, 313-339.
- ELLIOTT, D.H., HARVEY, A.S. & PROCOS, D., 1973: *An Overview of the Halifax Time-Budget Study*. Halifax, unpublished.
- FARLEY, R., 1976: Components of Suburban Population Growth. In: *SCHWARTZ* 1976.
- FELDMAN, A.S. & TILLY, C., 1960: The Interaction Social and Physical Space. In: *ASR* 25, 877-884.
- FESTINGER, L., SCHACHTER, S. & BACK, K., 1963 (1950): *Social Pressures in Informal Groups*. Stanford.

FISCHER, C.S., 1976: The Urban Experience. New York.

FISCHER, M.M., 1978: Zur Lösung funktionaler regionaltaxonomischer Probleme auf der Basis von Interaktionsmatrizen: Ein neuer graphentheoretischer Ansatz. In: Karlsruher Manuskripte, Heft 25. Karlsruhe.

FISCHER, M.M., 1981: Eine Methodologie der Regionaltaxonomie: Probleme und Verfahren der Klassifikation und Regionalisierung in der Geographie und Regionalforschung. Bremer Beiträge zur Geographie und Raumplanung, Vol.3. Bremen.

FITZSIMMONS, S.J. & LAVAY, W.G., 1976: Social Economic Accounts System (SEAS): Toward a Comprehensive, Community-Level Assessment Procedure. In: Social Indicators Research 2, 389-452.

FITZSIMMONS, S.J. & LAVAY, W.G., 1977: Community: Toward an Integration of Research, Theory, Evaluation, and Public Policy Considerations. In: Social Indicators Research 4, 25-66.

FORRESTER, J.W., 1969: Urban Dynamics. Cambridge/London.

FOX, K.A., 1974: Social Indicators and Social Theory. Elements of an Operational System. New York.

FRANKE, J., 1976: Informations- und Steuerungsinstrumente zur Schaffung einer höheren Lebensqualität in Städten. In: PFAFF & GEHRMANN 1976.

FRANKE, T., 1974: Dokumentation von Zielsystemen zur Stadtentwicklungsplanung. Berlin (West).

FRENCH, R.A. & HAMILTON, F.E.I. (eds.), 1979: The Socialist City. Chichester.

FREY, W.H., 1979: Central City White Flight: Racial and Nonracial Causes. In: ASR 44, 425-448.

FRIED, M. & GLEICHER, P., 1961: Some Sources of Residential Satisfaction. In: Journal of the American Institute of Planners 27, 305-315.

FRIEDRICHS, J., 1975: Soziologische Analyse der Bevölkerungs-Suburbanisierung. In: AKADEMIE 1975.

FRIEDRICHS, J., 1976: Zum Zusammenhang von Erklärungen sozialer Ungleichheit, Indikatoren des sozio-ökonomischen Status, Indizes des sozio-ökonomischen Status und der Abgrenzung von Schichten. Hamburg, unpublished.

FRIEDRICHS, J., 1977: Stadtanalyse. Reinbek.

FRIEDRICHS, J., 1977 a: Suburbanisierung in der Region Hamburg. Forschungsbericht für die Akademie für Raumforschung und Landesplanung, Hannover, unpublished.

FRIEDRICHS, J. (ed.), 1978: Stadtentwicklungen in kapitalistischen und sozialistischen Ländern. Reinbek.

FÜRST, D. (ed.), 1977: Stadtökonomie. Stuttgart /New York.

GANS, H.J., 1962: The Urban Villagers. New York.

GEHRMANN, F., 1976 a: Quantifizierungsversuche der Lebensqualität. In: PFAFF & GEHRMANN 1976.

GEHRMANN, F., 1976 b: Sozialindikatoren zur Erfassung von Versorgungsniveaus: Die Versorgung mit Einrichtungen für alte Menschen. In: ZAPF 1976 b.

GEISELBERGER, S. (ed.), 1972: Schwarzbuch: Ausländische Arbeiter. Frankfurt/M.

- GERMANI, G., 1964: Migration und Akkulturation. In: ATTESLANDER & HAMM 1974.
- GERNERT, W., 1975: Jugend und Freizeit in Hamm. Hamm.
- GIESE, E., 1980: Entwicklung und Forschungsstand der quantitativen Geographie im deutschsprachigen Bereich. In: Geographische Zeitschrift 68, 256-283.
- GITTUS, E., 1965: The Structure of Urban Areas. In: Town Planning Review 35, 5-20.
- GLICKMANN, N.J., 1976: On the Japanese Urban System. In: JRS 16, 317-336.
- GÖDERITZ, J., RAINER, R. & HOFFMANN, H., 1957: Die gegliederte und aufgelockerte Stadt. Tübingen.
- GOLDSTEIN, S., 1963: Some Economic Consequences of Suburbanisation in the Copenhagen Metropolitan Area. In: AJS 68, 551-564.
- GOODMAN, J.L., 1976: Housing Consumption Disequilibrium and Local Residential Mobility. In: Environment and Planning 8, 855-874.
- GOODMAN, J.L., 1978: Causes and Indicators of Housing Quality. In: Social Indicators Research 5, 195-210.
- GORDON, M., 1964: Assimilation in American Life. New York.
- GÖSCHEL, A., HERLYN, U., KRÄMER, J., SCHARDT, T. & WENDT, G., 1979 a: Stadtstrukturen als restriktive Bedingungen kommunaler Infrastrukturpolitik. In: KAUFMANN 1979.
- GÖSCHEL, A., HERLYN, U., KRÄMER, J., SCHARDT, T. & WENDT, G., 1979 b: Infrastrukturdisparitäten und soziale Segregation. In: KAUFMANN 1979.
- GRAY, R.J., 1972: Social Well-Being in Tampa: A Case Study in the Use of Social Indicators at the Intra-City Level. MA Thesis, University of Florida, Dept. of Geography. Gainesville.
- GROSSMANN-HENSEL, B., 1980: Stadt-Umland-Wanderung als Folge des inner-regionalen Angebotes an Wohnraum? Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.
- GUEST, A.M., 1972: Patterns of Family Location. In: Demography 9, 159-171.
- GÜRTLER, C., 1978: Regelmäßigkeiten raum-zeitlichen Verhaltens. Nürnberg, unpublished.
- GUTERBOCK, T.M., 1976: The Push Hypothesis: Minority Presence, Crime and Urban Deconcentration. In: SCHWARTZ 1976.
- HAACK, A., 1981: Die Trennung von Arbeiten und Wohnen: eine Analyse der Berufspendlerströme in Hamburg 1939, 1950, 1961 und 1970. Hamburg.
- HAAR, C.M. (ed.), 1972: The End of Innocence. A Suburban Reader. Glenview, Ill.
- HAARIS, C.D., 1943: Suburbs. In: AJS 49, 1-13.
- HAEBERLIN, F., 1971: Zwischen Flucht und Integration. Freiburg.
- HÄGERSTRAND, T., 1970: What About People in Regional Science? In: Regional Science Ass. Papers 24, 7-21.
- HAMM, B., 1977: Die Organisation der städtischen Umwelt. Frauenfeld/Stuttgart.
- HAMM, B., 1977 a: Zur Revision der Sozialraumanalyse. In: Zeitschrift für Soziologie 6, 174-188.

- HAMM, B., 1978: Zur Revision der Sozialraumanalyse. In: Zeitschrift für Soziologie 7, 396-399.
- HAMM, B. (ed.), 1979: Lebensraum Stadt. Frankfurt/New York.
- HAMM, B., 1980: Social Area Analysis and Factorial Ecology. Trier, unpublished.
- HAUBOLD, D., 1976: Sozio-ökonomische Situation und Versorgungsniveau in den Ortsteilen der Stadtgemeinde Bremen. Bremen.
- HAWLEY, A.H., 1950: Human Ecology. New York.
- HAWLEY, A.H., 1971: Urban Society. New York.
- HAWLEY, A.H. & DUNCAN, O.D., 1957: Social Area Analysis: A Critical Appraisal. In: Land Economics 33, 227-245.
- HEGEMANN, W., 1930: Das steinerne Berlin. Reprint, Berlin/Frankfurt/Wien.
- HEIDEMANN, C. & HEINZMANN, U., 1979: Familiensituation und Umzugsverhalten. Karlsruhe.
- HEIDEMANN, C. & STAPF, K.H., 1969: Die Hausfrau in ihrer städtischen Umwelt. Braunschweig.
- HEISS, J., 1966: Residential Segregation and the Assimilation of Italians in an Australian City. In: International Migration Review 4, 165-170.
- HELLBERG, H., 1975: Der suburbane Raum als Standort von privaten Dienstleistungseinrichtungen. In: AKADEMIE 1975.
- HELMHOLTZ, R. & LASS, C., 1977: Empirische Studien zu Assimilation und Integration. Diskussion der benutzten Indikatoren und Indizes. University of Hamburg, Seminar für Sozialwissenschaften. Hamburg, unpublished.
- HEMPEL, W., 1977: Zeitbudgets, Aktivitäten und Aktionsräume der Bewohner zentral und nicht zentral gelegener Neubau-Siedlungen Hamburg. Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.
- HENSHER, D.A., 1976: The Structure of Journeys and Nature of Travel Patterns. In: Environment and Planning A, 8, 655-672.
- HERBERT, D.T., 1973: Urban Geography. New York.
- HERBERT, D.T. & EVANS, D.J., 1974: Urban Sub-Areas as Sampling Frameworks for Social Survey. In: Town Planning Review 45, 171-188.
- HERBERT, D.T. & JOHNSON, R.J. (eds.), 1976: Social Areas in Cities, Vol. 2. Chichester.
- HERBERT, D.T. & SMITH, D.M. (eds.), 1979: Social Problems and the City. Oxford.
- HERLYN, U. (ed.), 1974: Stadt- und Sozialstruktur. München.
- HERLYN, U. (ed.), 1980: Großstadtstrukturen und ungleiche Lebensbedingungen in der Bundesrepublik. Frankfurt/New York.
- HERZ, R., 1979: Stadtplanung für den Alltag. In: LAMMERS & HERZ 1979.
- HESSE, J.J., 1972: Stadtentwicklungsplanung: Zielfindungsprozesse und Zielvorstellungen. 2nd Edition, Stuttgart.
- HEUER, H. & SCHAFER, R., 1978: Stadtflucht. Stuttgart.
- HEUWINKEL, D., 1981: Aktionsräumliche Analysen und Bewertung von Wohngebieten. Hamburg.
- HINST, K., 1968: Das Verhältnis zwischen Westdeutschen und Flüchtlingen. Bern.

- HOBRECHT, J., 1868: Über öffentliche Gesundheitspflege. Stettin.
- HOFFMANN-NOWOTNY, H.-J. (ed.), 1978: Messung sozialer Disparitäten. Frankfurt/New York.
- HOFFMEYER-ZLOTNIK, J., 1977: Gastarbeiter im Sanierungsgebiet. Hamburg.
- HOFFMEYER-ZLOTNIK, J., 1979: Eine Analyse des sozialökologischen Prozesses der Bevölkerungssukzession. In: HAMM 1979.
- HÖLLHUBER, D., 1978: Wohnstandortentscheidungen für Randbereiche von Stadtregionen und das Problem der Randwanderung für die Raumplanung. Karlsruhe.
- HOLM, K., 1977: Die Befragung 5. Pfadanalyse, Coleman-Verfahren. München.
- HOLM, K., 1977 a: Lineare multiple Regression und Pfadanalyse. In: HAMM 1977.
- HORSTMANN, K., 1976: Zur Soziologie der Wanderungen. In: KÖNIG 1976, Vol. 5.
- HÜBLER, K.-H., SCHARMER, E., WEICHMANN, K. & WIRZ, S., 1980: Zur Problematik der Herstellung gleichwertiger Lebensverhältnisse. Hannover.
- HUFFSCHMID, J., 1969: Die Politik des Kapitals. Konzentration und Wirtschaftspolitik in der Bundesrepublik. Frankfurt/Main.
- HUMMELL, H.J., 1972: Probleme der Mehrebenenanalyse. Stuttgart.
- HUMMELL, H.J. & ZIEGLER, R. (eds.), 1976: Korrelation und Kausalität. 3 vols. Stuttgart.
- HUMPHREY, N.D., 1944: The Changing Structure of the Detroit Mexican Family. An Index of Acculturation. In: ASR 9, 622-626.
- HUNTER, A., 1980: Why Chicago? In: American Behaviour Science 24, 215-227.
- HURD, R.M., 1924 (1903): Principles of City Land Value. New York.
- IPSEN, D., 1977: Aufenthaltsdauer und Integration ausländischer Arbeiter. In: Zeitschrift für Soziologie 4, 403-424.
- JANSON, C.-G., 1969: Some Problems on Ecological Factor Analysis. In: DOGAN & ROKKAN 1969.
- JESSEN, J., MEINECKE, B., SIEBEL, W. & WALTHER, U.-J., 1978: Untersuchungen zur Mobilität der Wohnbevölkerung in Stadtregionen. In: Leviathan 4, 519-535.
- JIOBU, R.M. & MARSHALL, H.H., 1971: Urban Structure and the Differentiation Between Blacks and Whites. In: ASR 36, 638-649.
- JOHNSTON, R.J., 1971: Some Limitations of Factorial Ecologies and Social Area Analysis. In: Economic Geography 47, 314-323.
- JOHNSTON, R.J., 1976: Residential Area Characteristics: Research Methods for Identifying Urban Sub-areas - Social Area Analysis and Factorial Ecology. In: Herbert, D.J. & Johnston, R.J. (eds.): Spatial Processes and Form. Chichester.
- JONES, L.F., 1967: Ethnic Concentration and Assimilation: An Australian Case Study. In: SF 45, 412-423.
- JØRESKOG, K.G. & SØRBOM, D., 1978: LISREL IV. A General Computer Program for Estimation of Linear Structural Equation Systems by Maximum Likelihood Methods. User's Guide. Uppsala.

- KASARDA, J.D., 1972: The Impact of Suburban Population Growth on Central City Service Functions. In: AJS 77, 1111-1124.
- KATSARAKIS, N., 1974: Probleme kultureller und gesellschaftlicher Integration griechischer Arbeitnehmer in der BRD. Exemplarische Untersuchung im Bereich des Freizeitverhaltens. Doctorate Thesis Technische Universität Aachen. Aachen.
- KAUFMANN, K., 1975: Kognitiv-hedonistische Theorie menschlichen Verhaltens. Ph. D. University of Mannheim. Mannheim.
- KAUFMANN, F.X. (ed.), 1979: Bürgernahe Sozialpolitik. Planung, Organisation und Vermittlung sozialer Leistungen auf lokaler Ebene. Frankfurt/New York.
- KIM, I.O. & KOHOUT, F.I., 1975: Special Topics in General Linear Models. In: NIE et al. 1975.
- KLEE, E., 1972 a: Gastarbeiter als Subproletariat. In: KLEE 1972 b.
- KLEE, E. (ed.) 1972 b: Gastarbeiter. Frankfurt /M.
- KLEMMER, P., 1971: Der Metropolisierungsgrad von Stadtregionen. Hannover.
- KLINGBEIL, D., 1969: Zur sozialgeographischen Theorie und Erfassung des täglichen Berufspendelns. In: Geographische Zeitschrift 57, 108-131.
- KLINGBEIL, D., 1978: Aktionräume im Verdichtungsraum. Kallmünz/Regensburg.
- KNAUSS, E., 1981: Räumliche Strukturen als Bedingungen der Bevölkerungsverteilung. Hamburg.
- KÖNIG, R. (ed.), 1976: Handbuch der empirischen Sozialforschung. 14 vols. Stuttgart.
- KOVALEV, S.A., 1973: A Typology of Suburban Zones. In: Soviet Geography 14, 1-6.
- KRESS, G. & SENGHAAS, D. (eds.), 1972: Politikwissenschaft. Frankfurt/Main.
- KUSMER, K.L., 1978: A Ghetto Takes Shape. Black Cleveland, 1870 - 1930. Chicago/London.
- KUTTER, E., 1972: Demographische Determinanten städtischen Personenverkehrs. Braunschweig.
- KUTTER, E., 1973: Aktionsbereiche des Stadtbewohners. In: Archiv für Kommunalwissenschaften 12, 69-85.
- LA GORY, M., WARD, R. & JURAVICH, T., 1980: The Age Segregation Process. Explanation for American Cities. In: Urban Affairs Quarterly 16, 59-80.
- LAMMERS, G. & HERZ, R. (eds.), 1979: Aktivitätsmuster für die Stadtplanung. Seminarberichte des Instituts für Städtebau und Landesplanung der Universität Karlsruhe. Karlsruhe.
- LAMMERS, G. & REICHENBACH, E. (eds.), 1976: Verhalten in der Stadt. Seminarberichte des Instituts für Städtebau und Landesplanung der Universität Karlsruhe. Karlsruhe.
- LAND, K.C., 1975: Social Indicator Models: An Overview. In: LAND & SPILERMAN 1975.
- LAND, K.C. & FELSON, M., 1976: A General Framework for Building Dynamic Macro Social Indicator Models: Including an Analysis of Changes in Crime Rates and Police Expenditures. In: AJS 82, 565-604.
- LAND, K.C. & SPILERMAN, S. (eds.), 1975: Social Indicator Models. New York.

- LANDECKER, W.S., 1951: Types of Integration and Their Measurement. In: AJS 56, 332-340.
- LANDWEHRMANN, F. & KLEIBRINK, G., 1977: Kleinräumige Mobilität - Empirische Untersuchung zum Nahwanderungsverhalten in den Städten Bochum und Düsseldorf. Hofheim, unpublished.
- LANGE, E., 1978: Determinanten der Entscheidung für das Studium der Soziologie - eine Anwendung der Pfadanalyse. In: Zeitschrift für Soziologie 7, 72-86.
- LANGKAU-HERMANN, M., TANK, H. & SCHULZ, A., 1974: Ziele für den Städtebau in Ballungsgebieten. Zielvorstellungen und Zielzusammenhänge zur Lösung städtischer Probleme in Agglomeration auf der Basis einer umfassenden Entwicklungsplanung. Schriftenreihe Städtebauliche Forschung des Bundesministeriums für Raumordnung, Bauwesen und Städtebau 03.032. Bonn.
- LASCHINGER, W. & LÖTSCHER, L., 1978: Basel als urbaner Lebensraum. Basel.
- LAU, C., 1975: Theorien gesellschaftlicher Planung. Eine Einführung. Stuttgart.
- LAZERWITZ, B., 1960: Metropolitan Community Residential Belts, 1950 and 1956. In: ASR 25, 245-252.
- LeCORBUSIER, 1957: La Charte d'Athènes. Paris.
- LEIPERT, C., 1978: Gesellschaftliche Berichterstattung. Eine Einführung in Theorie und Praxis sozialer Indikatoren. Berlin (West).
- LENTORP, B., 1978: A Time-Geographical Simulation Model of Individual Activity Programmes. In: CARLSTEIN et al., 1978, Vol. 2.
- LESLIE, G.R. & RICHARDSON, A.H., 1961: Life-Cycle, Career Pattern and the Decision to Move. In: ASR 26, 894-902.
- LEWIN, K., 1936: Principles of Topological Psychology. New York.
- LIEBERSON, S., 1961: The Impact of Residential Segregation on Ethnic Assimilation. In: PEACH 1975.
- LINDBLOM, C.E., 1959: The Science of "Muddling Through". In: Public Administration Review 19, 79-88.
- LIU, W.T., 1959: The Marginal Catholics in the South. A Revision of Concepts. In: AJS 65, 383-390.
- LIU, B.-C., 1976: Quality of Life Indicators in U.S. Metropolitan Areas. A Statistical Analysis. New York.
- LONG, L.H., 1972: The Influence of Number and Ages of Children on Residential Mobility. In: Demography 9, 371-382.
- LOWRY, I.S., 1964: A Model of Metropolis. RAND Corporation St. Monica Memorandum RM 4035-RC California.
- MANHART, M., 1977: Die Abgrenzung homogener städtischer Teilgebiete. Hamburg.
- MARSTON, W.G. & VAN VALEY, T.L., 1979: The Role of Residential Segregation in the Assimilation Process. The Annals of the American Academy of Political and Social Science 441, 13-25.
- MASOTTI, L.H. & HADDEN, J.K. (eds.), 1973: The Urbanization of the Suburbs. Beverly Hills/London.
- MATTI, W., 1972: Das Wahlverhalten der Hamburger Bevölkerung bei den Bürgerschaftswahlen 1966 und 1970. In: Hamburg in Zahlen, Sonderheft 1 (Wahl-atlas 1972).

- McCLENDON, M.J., 1974: Interracial Contact and the Reduction of Prejudice. In: SF 7 (4), 47-65.
- McELRATH, D.C., 1965: Urban Differentiation: Problems and Prospects. In: Law and Contemporary Problems 30, 103-110.
- McELRATH, D.C., 1968: Societal Scale and Social Differentiation: Accra, Ghana. New York.
- MEIER, D.L. & BELL, W., 1959: Anomia and Differential Access to the Achievement of Life Goals. In: ASR 24, 189-198.
- MEIER-BRAUN, K.-H., 1980: "Gastarbeiter" oder Einwanderer? Anmerkungen zur Ausländerpolitik in der Bundesrepublik Deutschland. Frankfurt/Berlin/Wien.
- MICHELSON, W. (ed.), 1975: Time-Budgets and Social Activity. Vol. 1. University of Toronto, Centre for Urban Community Studies. Major Report No. 4. Toronto.
- MICHELSON, W. (ed.), 1977: Public Policy in Temporal Perspective. The Hague.
- MÜHLICH, E., 1978: Entwicklung von Handlungsfähigkeit in der gebauten Umwelt. In: MÜHLICH et al. 1978.
- MÜHLICH, E. et al., 1978: Zusammenhang von gebauter Umwelt und sozialem Verhalten im Wohn- und Wohnumweltbereich. Schriftenreihe Städtebauliche Forschung des Bundesministeriums für Raumordnung, Bauwesen und Städtebau 03.062. Bonn.
- MÜLLER, J., 1976: Mobilität der Bevölkerung und Stadtteilstrukturen in Hamburg. In: Hamburg in Zahlen, Heft 1, 3-22.
- MÜLLER, W., 1972: Bildung und Mobilitätsprozeß - Eine Anwendung der Pfadanalyse. In: Zeitschrift für Soziologie 1, 65-84.
- MUMFORD, L., 1973: The City in History. Harmondsworth.
- MUMPHREY, A.J. & WOLPERT, J., 1973: Equity Considerations and Concessions in the Siting of Public Facilities. In: Economic Geography 49, 109-121.
- MURDIE, R.A., 1969: Factorial Ecology of Metropolitan Toronto, 1951-1961. University of Chicago, Dept. of Geography, Research Paper No. 116. Chicago.
- MUTH, R.F., 1969: Cities and Housing. Chicago/London.
- NASCHOLD, F., 1969: Optimierung: Möglichkeiten, Grenzen und Gefahren. In: Stadtbauwelt 24, 282-285.
- NIE, N.H., et al., 1975: SPSS. Statistical Package for the Social Sciences. 2nd edition, New York.
- NIKOLINAKOS, M., 1973: Politische Ökonomie der Gastarbeiterfrage. Reinbek.
- O'CONNOR, K., 1980: The Analysis of Journey to Work Patterns in Human Geography. In: Progress in Human Geography 4, 475-499.
- OECD (Organisation for Economic Cooperation and Development, ed.), 1976: Measuring Social Well-being. A Progress Report on the Development of Social Indicators. Paris.
- OFFE, C., 1969: Politische Herrschafts- und Klassenstrukturen. Zur Analyse spätkapitalistischer Gesellschaftssysteme. In: KRESS & SENGHAAS 1972.
- OFFE, C., 1972: Strukturprobleme des kapitalistischen Staates. Aufsätze zur politischen Soziologie. Frankfurt/Main.

- OLSEN, R.A. & GUEST, A.M., 1977: Migration and City-Suburb Status Differences. In: Urban Affairs Quarterly 12, 523-532.
- OPP, K.-D., 1978: Theorie sozialer Krisen. Hamburg.
- OPP, K.-D. & SCHMIDT, P., 1976: Einführung in die Mehrvariablenanalyse. Grundlagen der Formulierung und Prüfung komplexer sozialwissenschaftlicher Aussagen. Reinbek.
- PAHL, R.E. (ed.), 1968: Readings in Urban Sociology. Oxford.
- PAMPEL, F.C. & CHOLDIN, H.M., 1978: Urban Location and Segregation of the Aged: A Block-Level Analysis. In: SF 56, 1121-1139.
- PEACH, C. (ed.), 1975: Urban Social Segregation. London.
- PFAFF, M., 1976: Informations- und Steuerungsinstrumente zur Schaffung einer höheren Lebensqualität in Städten. In: PFAFF & GEHRMANN 1976.
- PFAFF, M. & GEHRMANN, F. (eds.), 1976: Informations- und Steuerungsinstrumente zur Schaffung einer höheren Lebensqualität in Städten. Göttingen.
- PICKVANCE, C.G., 1973: Life-Cycle, Housing Tenure and Intra-Urban Residential Mobility: A Causal Model. In: The Sociological Review 21, 279-297.
- PICKVANCE, C.G., 1974: Life-Cycle, Housing Tenure and Residential Mobility: A Path Analytic Approach. In: Urban Studies 11, 171-188.
- PILOTSTUDIE 1978: Pilotstudie zur Verbesserung der sozialen Verhältnisse in Wilhelmsburg. (Kurzfassung), ed. by Bezirksamt Hamburg-Harburg. Hamburg.
- PINCH, S., 1979: Territorial Justice in the City. In: HERBERT & SMITH 1979.
- PREISER, W.F.E., 1976: Übersicht über umweltspsychologische Konzepte mit zwei Fallstudien über Fußgängerverhalten in öffentlichen Räumen. In: LAMMERS & REICHENBACH 1976.
- PROGNOS 1976: Qualitativer und quantitativer Wohnungsbedarf und Wanderungen in der Freien und Hansestadt Hamburg. Vol. 3: Analyse der Wanderungsgründe und des künftigen Wohnungsbedarfes. Hamburg.
- REES, P.H., 1968: The Factorial Ecology of Metropolitan Chicago, 1960. Unpublished M.A. Thesis. Chicago.
- REES, P.H., 1972: Problems of Classifying Subareas Within Cities. In: BERRY & SMITH 1972.
- REES-POWELL, A., 1966: Differentials in the Integration Process of Dutch and Italian Immigrants in Edmonton, Canada. In: International Migration Review 4, 100-113.
- REICHENBACH, E., 1972: Vergleich von Stadtentwicklungsmodellen. Braunschweig.
- REX, J.A., 1968: The Sociology of a Zone in Transition. In: PAHL 1968.
- RICHARDSON, A., 1957: The Assimilation of British Immigrants in Australia. In: Human Relations 10, 157-166.
- RICHARDSON, H.W., 1977 (1971): Standortverhalten, Bodenpreise und Raumstruktur. In: FÜRST 1977.
- RIEDEL, P.L. & BLOCKER, T.J., 1978: Race Prejudice, Status Prejudice and Socioeconomic Status. In: Sociology and Social Research 62, 558-571.
- RIESS, A. (ed.), 1964: Louis Wirth on Cities and Social Life. Chicago.

- ROBINSON, J.W. & PRESTON, J.D., 1976: Equal-Status Contact and Modification of Racial Prejudice. In: SF 54, 911-924.
- ROBSON, B.T., 1969: Urban Analysis. Cambridge.
- ROBSON, B.T., 1975: Urban Social Areas. London.
- v. ROHR, H.-G., 1971: Industriestandortverlagerungen im Hamburger Raum. Hamburg.
- v. ROHR, H.-G., 1975: Der Prozess der Industriesuburbanisierung. In: AKADEMIE 1975.
- ROKKAN, S., 1971: Die vergleichende Analyse der Staaten- und Nationenbildung: Modelle und Methode. In: ZAPF 1971.
- ROMANOS, M.C., 1976: Residential Spacial Structure. Lexington.
- ROOF, W.C., VAN VALEY, T.L. & SPAIN, D., 1976: Residential Segregation in Southern Cities. In: SF 55, 59-71.
- ROSSI, P.H., 1955: Why Families Move. Glencoe, Ill.
- ROY, P., 1962: The Measurement of Assimilation: The Spokane Indians. In: AJS 67, 541-551.
- SALINS, P.D., 1971: Household Location Patterns in American Metropolitan Areas. In: Economic Geography 47, Suppl., 234-248.
- SAS (SOZIALWISSENSCHAFTLICHE ARBEITSGRUPPE STADTFORSCHUNG), 1979: Zeitbudget und Aktionsräume von Stadtbewohnern. Hamburg.
- SCHÄPFERS, B. (ed.), 1973: Gesellschaftliche Planung. Materialien zur Planungsdiskussion in der BRD. Stuttgart.
- SCHAFFER, F., 1975: Randwanderung im Raum Augsburg. Augsburg.
- SCHEUCH, E. & KUTSCH, T., 1975: Grundbegriffe der Soziologie, Vol. 1. Stuttgart.
- SCHIETINGER, E.F., 1964: Racial Succession and Changing Property Values in Residential Chicago. In: BURGESS & BOGUE 1964.
- SCHINZ, A., 1964: Berlin, Stadtschicksal und Städtebau. Braunschweig.
- SCHMIEDEL, R., 1979: Clusteranalyse werktäglicher Zeitbudgetmuster. In: LAMMERS & HERZ 1979.
- SCHNORE, L.F., 1957 a: The Growth of Metropolitan Suburbs. In: ASR 22, 165-173. And in: DOBRINER 1958.
- SCHNORE, L.F., 1957 b: Metropolitan Growth and Decentralization. In: AJS 63, 171-180.
- SCHNORE, L.F., 1957 c: Satellites and Suburbs. In: SF 36, 121-126. And in: DOBRINER 1958.
- SCHNORE, L.F., 1958: Components of Population Change in Large Metropolitan Suburbs. In: ASR 23, 570-573.
- SCHNORE, L.F., 1972: Class and Race in Cities and Suburbs. Chicago.
- SCHNORE, L.F. & KLAFF, V.Z., 1972: Suburbanization in the Sixties: A Preliminary Analysis. In: Land Economics 48, 23-33.
- SCHREIBER, F., 1976: Informations- und Steuerungsinstrumente in der Stadtforschung. In: PFAFF & GEHRMANN 1976.
- SCHULTES, W. & WALKER, D., 1976: Einwohnerentwicklung und Wohnungsbedarf in den Mannheimer Stadtteilen. Mannheim.

- SCHÜTZ, M.W., 1979: Segregation von Altersgruppen in der Großstadt. Darstellung und Analyse am Beispiel Hamburgs. Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.
- SCHWANDT, A., 1974: Probleme des Kontaktverhaltens in städtischen Wohngebieten. In: Städtebausozioologische Probleme. Berlin.
- SCHWARTZ, B. (ed.), 1976: The Changing Face of the Suburbs. Chicago/London.
- SELLITZ, C., JAHODA, M., DEUTSCH, M. & COOK, S.W., 1962: Research Methods in Social Relations. 2nd Edition, New York.
- SHELDON, E.B. & FREEMAN, H.E., 1970: Notes on Social Indicators: Promises and Potentials. In: Policy Sciences 1, 97-111.
- SHELDON, E.B. & LAND, K.C., 1972: Social Reporting for the 1970's. A Review and Programmatic Statement. In: Policy Science 3, 137-151.
- SHEVY, E. & WILLIAMS, M., 1949: The Social Areas of Los Angeles: Analysis and Typology. Berkeley.
- SHEVY, E. & BELL, W., 1955: Social Area Analysis. Stanford, Calif.
- SHILS, E., 1962: The Theory of Mass Society. In: Diogenes 39, 45-66.
- SIEVERTS, T., TRIEB, M. & HAMANN, U., 1976: Die Erfassung, Erhaltung und Steigerung der Erlebnisqualität eines Stadtteils. In: PFAFF & GEHRMANN 1976.
- SILLS, D.L. (ed.), 1968: International Encyclopedia of the Social Sciences. 18 vols. New York.
- SPEARE, A., 1970: Home Ownership, Life Cycle Stage, and Residential Mobility. In: Demography 7, 449-458.
- SPEARE, A., 1974: Residential Satisfaction as an Intervening Variable in Residential Mobility. In: Demography 11, 173-188.
- STATISTISCHES AMT STUTTGART (ed.), 1979: Statistischer Informationsdienst. Untersuchungen zur Sozialstruktur, Sonderheft 2/79. Stuttgart.
- STATISTISCHES LANDESAMT HAMBURG (ed.), 1973: Befragung der aus Hamburg Fortziehenden. Drucksache VII/2928 der Hamburgischen Bürgerschaft. Hamburg.
- STEWART, M., 1972: The City: Problems of Planning. Harmondsworth.
- SUTTLES, G.B., 1968: The Social Order of the Slum. Chicago/London.
- SWEETSER, F.L., 1965: Factorial Ecology: Helsinki, 1960. In: Demography 1, 372-386.
- SWEETSER, F.L., 1969: Ecological Factors in Metropolitan Zones and Sectors. In: DOGAN & ROKKAN 1969.
- TAEUBER, K.E. & TAEUBER, A.F., 1964: White Migration and Socio-Economic Differences Between Cities and Suburbs. In: ASR 29, 718-729.
- TAEUBER, K.E. & TAEUBER, A.F., 1964 a: The Negro as an Immigrant Group: Recent Trends in Racial and Ethnic Segregation in Chicago. In: AJS 69, 374-382.
- TAFT, D.R. & ROBBINS, R., 1954: International Migrations. The Immigrant in the Modern World. New York.
- THOMAS, C.J., 1976: Sociospatial Differentiation and the Use of Services. In: HERBERT & JOHNSON 1976.
- THORNS, D.C., 1973: Suburbia. London.

- THROLL, M., GÖTZE, G., HERLYN, S., HESSE, F. & WURTINGER, H., 1974: Infrastrukturausgleich und Hochschulneugründung. In: HERLYN 1974.
- TIMMS, D.W.G., 1969: The Dissimilarity Between Overseas-Born and Australian-Born in Queensland: Dimensions of Assimilation. In: Sociology and Social Research 53, 363-374. And in: PEACH 1975.
- TIMMS, D.W.G., 1971: The Urban Mosaic. Cambridge.
- TINBERGEN, J., 1952: On the Theory of Economics Policy. Amsterdam.
- TYRON, R.C., 1955: Identification of Social Areas by Cluster Analysis. Berkeley.
- UN ESC (United Nations, Economic and Social Council, ed.), 1976: Social and Demographic Statistics. Draft Guidelines on Social Indicators. (UN, E/CN.3/488, 1.3.1976) New York.
- US DEPT HEW (United States Department of Health, Education and Welfare, ed.), 1959 ff: Health, Education and Welfare Trends. Washington, D.C.
- US DEPT HEW, 1960 ff: Health, Education and Welfare Indicators. Washington, D.C.
- US DEPT HEW, 1969: Toward a Social Report. Washington, D.C.
- VAN ARSDOL, M.D., CAMILLERI, S.F. & SCHMID, C.F., 1958: The Generality of Urban Social Area Indexes. In: ASR 23, 277-284.
- WAGENER, F., 1971: Ziele der Stadtentwicklung nach Plänen der Länder. Göttingen.
- WARNER, W.L. & SROLE, L., 1960: The Social Systems of American Ethnic Groups. New Haven.
- WASSERMAN, I.M. & CHUA, L.A., 1980: Objective and Subjective Social Indicators of the Quality of Life in American SMSA's: A Reanalysis. In: Social Indicators Research 8, 365-381.
- WATZLAWIK, P. et al., 1973: Menschliche Kommunikation. Formen, Störungen, Paradoxien. Stuttgart.
- WEDEBYE, J., 1975: Migrations to and from the Municipalities in the Metropolitan Area 1952-1969. Copenhagen.
- WEEDE, E., 1972: Zur Pfadanalyse: Neuere Entwicklungen, Verbesserungen, Ergänzungen. In: Kölner Zeitschrift für Soziologie und Sozialpsychologie 24, 101-117.
- WEEDE, E., 1975: LISREL - Versuch einer allgemeinverständlichen Gebrauchsanleitung. Mannheim.
- WEGENER, M., 1976: Simulation und Bewertung: Ein iteratives Lösungsverfahren für die Stadtplanung. In: PFAFF & GEHRMANN 1976.
- WEINSTOCK, S.A., 1964: Some Factors that Retard or Accelerate the Rate of Acculturation. In: Human Relations 17, 321-340.
- WEISS, C.H., 1972: Evaluation Research. Methods for Assessing Program Effectiveness. Englewood Cliffs, N.J.
- WERNER, R., 1975: Soziale Indikatoren und politische Planung. Einführung in Anwendungen der Makrosoziologie. Reinbek.
- WHYTE, W.F., 1961: Street Corner Society. The Social Structure of an Italian Slum. 3rd Edition, Chicago.

- WILLKE, H., 1978: Zum Problem der Integration komplexer Sozialsysteme. Ein theoretisches Konzept. In: Kölner Zeitschrift für Soziologie und Sozialpsychologie 30, 228-252.
- WIRTH, L., 1948: Consensus and Mass Communication. In: ASR 13, 1-15.
- WIRTH, L., 1964: Race and Public Policy. In: RIESS 1964.
- YOUNG, M. & WILLMOTT, P., 1957: Family and Kinship in East London. London.
- ZAHN, J., 1975: Stadtentwicklungsmodelle. Karlsruhe.
- ZAPF, W. (ed.), 1971: Theorien des Sozialen Wandels. Köln.
- ZAPF, W., 1972: Zur Messung der Lebensqualität. In: Zeitschrift für Soziologie 1, 353-376.
- ZAPF, W. (ed.), 1974 f: Soziale Indikatoren. Konzepte und Forschungsansätze. 3 Vols., Frankfurt/New York.
- ZAPF, W., 1976 a: Sozialberichterstattung: Möglichkeiten und Probleme. Göttingen.
- ZAPF, W. (ed.), 1976 b: Gesellschaftspolitische Zielsysteme. Frankfurt/New York.
- ZAPF, W. (ed.), 1977: Lebensbedingungen in der Bundesrepublik. Sozialer Wandel und Wohlfahrtsentwicklung. Frankfurt/New York.
- ZIPF, G.K., 1947: The Hypothesis of the 'Minimum Equation' as a Unifying Social Principle. In: ASR 12, 627-650.
- ZIRWES, M., 1979: Soziale Indikatoren in der Stadtentwicklungsplanung. Entwicklung eines Großstadtindikatorensystems (GRISY) als Ansatz zu einer gesellschaftlichen Berichterstattung und Planung der Großstädte in der Bundesrepublik Deutschland. Unpublished Graduate Thesis, University of Hamburg, Institute of Sociology. Hamburg.